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Original Articles

ENUCLEATION OF UTERINE MYOMAS; WHY AND WHEN PERFORMED *

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PHILADELPHIA

The treatment of fibroids has ever been a mooted question. I can well remember the period when the extrusion of such growths through the long-continued administration of ergot was considered the proper plan of treatment, and the operative measures were principally confined to the reduction of the resistance to the action of the ergot. Not infrequently were seen cases in which the extrusion under this plan was so rapid that the circulation in the growth became affected and necrosis followed. Such a condition was fraught with danger whether a submucous or a subperitoneal growth.

It was not surprising that the futility of medical measures—indeed, their often disastrous effects—should have led to surgery as the means of escape from the discomforts incident to myomatous growths.

The earlier plans of treatment were necessarily confined to growths which were causing symptoms; and it is a well-known fact that the interstitial and subperitoneal rarely produce symptoms of a distressing character until sufficiently large to produce pressure or become visible through distention of the abdomen. The growths of the submucous variety, on the other hand, are very early the cause of discomfort and alarming symptoms from the profuse bleeding and the painful efforts of the uterus to expel the menacing growth.

The natural history of the extrusion of the latter growths was the origin of the ergot treatment, which was followed until the expulsion brought the growth within reach of the surgeon. Unfortunately it was but a very limited number of cases which were found amenable to such treatment, while medical measures were ineffectual or productive of additional danger to the majority.

Our present knowledge assures us that these patients suffered from weight and pressure of the tumors, from the absorption of toxins generated within them, and were endangered by necrotic and degenerative processes incident to their changing nutrition.

It is not surprising, then, that with increasing experience in operative measures within the abdomen measures should be instituted for the removal of the uterus containing these offending growths. The radical procedure was naturally chosen in view of the fact that the cases selected for operation were those in which the symptoms were so pronounced that the condition was no longer endurable. With a reduction of operative mortality, surgery has been resorted to much earlier in the history of the disease, and some have accepted the dictum that the pickled fibroid is the only fibroid to leave unmolested. The advocates of early operation are confronted with the recognition of the fact that early operation must necessarily result in the arrest of all hope of conception in a large number of comparatively young women, for fibroid growths are recognized as occurring in women between 25 and 40 years of age.

It is true that the presence of fibroids increases the tendency to sterility, but the large number of cases of the coexistence of pregnancy and fibromas demonstrates that they do not make sterility absolute.

The study of the specimens removed, showing the enveloping capsule and the ease with which the tumors could be peeled out, make the consideration of the removal of the growths and the preservation of a functionating uterus seem justifiable. The aim of any capital operative procedure is to save life, but the preservation of the function should be considered as next in importance, especially when the function preserved has to do with the propagation of the species.

Not infrequently a woman will place but little value on her ability to bear children—may, indeed, endeavor to avoid the responsibilities of the marital relation—but when she realizes that some operative procedure is followed by premature menopause she awakens to a realization of the fact that the function lost was one she prized beyond every other, and is so disturbed by her loss that the mental faculties become unbalanced.

The premature menopause frequently produces marked nervous and vasomotor disturbances, which destroy all comfort and pleasure in life. The combination of these symptoms with the mental phenomena induced by the knowledge of inability to conceive leads to mental derangement. As it is beyond our possibility to determine in advance the influence such measures will exert in any individual case, it seems the better procedure, whenever possible, to preserve the uterus and remove the growths.

An advantage of this procedure which is not always apparent to the patient in whom there is a recurrence is that, should the worst come and the growths recur, we can then if necessary do a second operation which will not, in the majority of cases, be required until years after the first. On the contrary, should the removal of the pelvic structures as a primary procedure be productive of deleterious effect, there is no plan by which we can replace the organs, and in many instances there is but little reason to hope for improvement.

I will not attempt to occupy the attention of the Section with the details of enucleation further than by remarking that the operation may be either vaginal or

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

abdominal. The former should be employed only when the growths are limited to those which encroach on the uterine cavity or are confined to the lower portion of the uterus, making them readily accessible through a roomy vagina.

In either the vaginal or abdominal procedure, the aim should be to do as little injury to the organ as possible; consequently the number of incisions into the uterus should be limited. The vascular supply to the growths occurs through the vessels of the capsule; consequently the hemorrhage is at times quite considerable and requires the employment of measures for its control. Some operators advocate the application of a rubber ligature about the cervix during the process of enucleation, but I have never found this necessary, as the bleeding can be controlled by pressure forceps direct to the bleeding vessels. Large vessels or sinuses should be ligated by passing a needle armed with a catgut ligature beneath the vessel. The wound or wounds in the uterus should be closed with interrupted catgut sutures and then with a second or superimposed row of sutures to bring the peritoneum in contact over the line of the wound. I formerly closed such wounds with several rows of continued catgut suture, but not infrequently the loose capsular connective tissue is of such low vitality that occasionally all the tissue inclosed in the line of suture will become so devitalized that it will slough out.

In reviewing my own work done to retain the uterus, I find about thirty-seven cases in which fibroids have been enucleated through an abdominal incision, and five cases in which the operation has been accomplished *per vaginam*. A large number of cases of myomectomy either through the vagina or by abdominal incision are not included, but only those in which the growths have been enucleated. In five of the abdominal cases, the operation was performed during gestation, and in all the patient continued to carry the offspring until the completion of pregnancy. In none of the cases has there been any trouble during labor. In several of the patients the convalescence has been stormy or prolonged, and in two death resulted. In one patient, a single woman, aged 33, thirteen growths were enucleated. The wounds were closed with several layers of continuous chromicized catgut suture, and finally the sutured surface secured to the lower angle of the abdominal wound. Her convalescence was disturbed. The abdominal wound became infected, and finally there was discharged through it a slough which contained the entire suture material employed in the fundus of the uterus. After a prolonged period the woman recovered, subsequently was married and gave birth in successive labors to two children. Her first labor was unattended by anything abnormal. Following the completion of the second, she went into collapse and died with what was supposed to be a rupture of the uterus and internal hemorrhage.

The growths have varied from one to twenty in number, and from the size of a pea to that of a child's head. The smaller, of course, were multiple. In eight cases the disease of the uterus was complicated by disease of the ovaries or tubes, requiring operation on one or both tubes. In one a hemorrhage occurred which required a vaginal incision some ten days later to evacuate the accumulation. In three cases it has been necessary to reoperate, and in one of them a second time. The latter operation was not for fibroids, however, but for appendicitis, and the opportunity was taken to overcome a ventral hernia. In one of these patients reoperated on, from whom two fibroids were enucleated at the first operation and no vestige of others recognized, at the second operation, five years later, twenty were enucleated and both ovaries removed for diseased conditions. One patient, from whom twenty growths, large and small, were removed eight years ago, now has a large collection, but as the menopause has occurred and they are not producing symptoms I have advised delay.

My analysis of my own cases and the study of the literature has caused me to regard the removal of fibroid growths by enucleation as indicated in the following conditions:

1. When the growths are few in number and the structure of the uterus is but little involved. Of course, the fibroids may be numerous but situated so near the surface as to permit their removal with but little injury to the general structure, but the large number indicates a tendency to fibroid degeneration which presages early redevelopment. Where a number of growths of considerable size are present, the structure of the uterus is so spread out and will be so injured as to render an attempt to save the organ attended with danger during the subsequent convalescence and an element of danger in the event of pregnancy and labor.

2. When the growths are readily accessible through the vagina or cervical canal. A growth within the uterus, either a sessile submucous or an interstitial, is readily attacked. Not infrequently, the canal may be partially dilated and the dilatation can be completed by the introduction of tents, or the cervix may be split bilaterally until the tumor is exposed or rendered accessible. The enucleation completed, the cavity may be packed with gauze and the split cervix closed much as is done in an ordinary trachelorrhaphy. The vaginal operations are attended with less constitutional disturbances than in the removal by an abdominal incision.

3. When the woman, whether unmarried or married, is under forty years of age, and particularly when she is childless or has but one or two children. The removal of the growths at an earlier period can not be considered as rendering certain the escape of the patient from recurrence, for one of my patients who had two fibroids enucleated when she was 33 years old five years later had twenty removed. The age of forty, however, is one at which the individual suffering from such growths begins to undergo retrogressive degenerations and when the patient has not previously been fertile pregnancy is much less likely to occur.

4. When the tubes and ovaries are free from complicating conditions. The existence of tubal or ovarian disease of sufficient gravity (as hydrosalpinx, or pyosalpinx, or ovarian hematoma), to render the probability of conception remote or to necessitate the removal of tubes and ovaries to insure restoration of health, should also be an indication for the removal of the fibromyomatous uterus. While it is true that in the majority of cases the tumors decrease and become quiescent after the menopause, yet they sufficiently often undergo necrosis and other degenerative changes to justify the removal of the uterus.

I have endeavored to indicate the conditions under which the enucleation of myomatous growths may be considered advisable, but it would seem even more important to enumerate some of the conditions in which experience has demonstrated that such a procedure would be inadvisable or even dangerous. On general principles, I would condemn the operation (1) when the woman affected has reached the age of forty, as with the changing conditions incident to the climacteric, the tendency to degenerative processes is increased. The woman who reaches this period unmarried or childless

is unlikely to be fertile and the tendency to sterility will be augmented by the disease and the operative procedure required for its relief. I consider it inadvisable (2) when the uterus is spread out by the growth or growths to such a degree that the reconstruction of a functionating uterus will not be feasible, and (3) when the tumors are so distributed in the structure of the uterus that the circulation will be greatly affected in the necessary suturing to replace the disordered structures.

The danger to the patient is so great in both of the classes indicated in 2 and 3 as to render attempts to preserve the organ not only inadvisable but unjustifiable. The patient is endangered during the convalescence from necrosis and infection of the structures of low vitality, from accumulation of blood in the torn tissues, and in some cases from extensive sloughing of the devitalized structures. Should she survive the operative danger and subsequently become pregnant, she is still in danger from uterine inertia or from rupture, as evidently occurred in one of my cases.

Enucleation of growths may occasionally be of service in promoting the procedure of removal of the uterus. Its employment reduces the bulk of the mass, permitting more ready access to the tissues of the pelvis. I have made use of it, as have others in many instances, to lessen the bulk and afford more ready access to the deeper structures of the pelvis. But two cases recur to me in which it was of especial advantage. The first was that of a woman who had been subjected to an abdominal incision and the wound closed because the conditions seemed too formidable to justify further procedure. When I opened the abdomen the pelvis was so packed with the growths that the vessels were inaccessible in any direction; but the enucleation of a large number of growths rendered the shell containing the blood-vessels readily accessible and the operation easily completed.

Recently I operated on a woman past the climacteric who had carried a large tumor over eighteen years. Of late she had been suffering from abdominal pain and elevated temperature. When the tumor was exposed it was found firmly fixed, filling the large pelvis, and with the intestines so adherent to its posterior surface as apparently to defy dissection. As progress seemed unfavorable in front, behind or on either side I determined to bisect the mass. Incision disclosed that the uterine wall, nearly an inch in thickness, covered a large necrotic fibroid. This was turned out, the inner surface of the uterus curetted, the bleeding vessels ligated and the organ closed without disturbing the adherent intestines. The convalescence was unusually rapid and satisfactory.

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ABSTRACT OF DISCUSSION

DR. H. J. BOLDT, New York City: I desire to endorse Dr. Montgomery's position as to the limited indication for myomectomy; in other words, myomectomy should not be done when the uterine structure has been greatly encroached on by a large number of myomatous nodules within the organ. An inflammatory condition of the ovaries and tubes does not mean that the ovaries should be removed. With malignant change taking place in the neoplasm, particularly in patients over 40 years of age, I believe entire extirpation of the uterus is indicated rather than a supravaginal extirpation of the uterus. In patients below or about that period it is more desirable to retain the cervix and the adnexa for obvious reasons, unless there is a question of malignancy. In appendicular inflammation, the inflammation is not necessarily present only in those cases in which it is seen macroscopically; in the majority of cases in which the appendix has been removed it has been demonstrated microscopically that there was present an inflammatory condition of the appendix.

DR. HOWARD A. KELLY, Baltimore: I agree with Dr. Montgomery that myomectomy is the operation *par excellence*. When a patient comes to us our first thought is: Can I take out these tumors? Not: Can I take out the uterus? And leaving out the age limit in young women, in the absence of complications I always try to do a myomectomy. But a myomectomy is undoubtedly more dangerous than hysterectomy. I have had over 200 cases of myomectomy and the percentage of mortality is large. The operation is dangerous on account of the possibility of serious secondary hemorrhage and of infection, particularly of the former.

I have only perhaps in the last fifty or sixty cases operated by methods in which I feel secure against this accident. They consist in limiting myself to the cases in which there are not so many tumors. I expose the uterus, tie with a little gauze strip, and bisect the tumor. It is of great advantage to use a serrated instrument. A large vessel supplying the tumor should be clamped as an ordinary bleeding vessel. If after having taken off the pressure and having clamped these vessels, there is still free hemorrhage, they should be tied very carefully as described by Dr. Montgomery. The method of suture is important. The vessels should be caught and sewn together with a strong continuous catgut suture. I sometimes make the figure-of-eight suture which binds the sutures between where they tie and loop. It is the best suture I know of in loose flaccid tissue to stop hemorrhage. Most important of all and that which has helped me with my myomectomies and the only thing by which I can feel safe is to close up the wound with a little bit of a drain. It is not enough to interfere with the prompt healing and when I pull it out after two or three days I always know whether there has been hemorrhage. There is always a surprising amount of leakage; if there is too much the wound is opened up. The little tell-tale drain has been invaluable in enabling me to feel comfortable about the patient. It can be removed on about the third day.

DR. E. E. MONTGOMERY, Philadelphia: It is not in the simple case, the case in which the fibroid is small and the operation slight, that death is likely to take place. I would not for a moment wish to be understood as advocating operation in every case in which fibroid tumor is recognized; but I do say that such cases should be kept carefully under observation; that the growth of the tumor should indicate early operation, principally for the purpose of trying to save the patient's functions and her power of propagation. When the tumor has gone beyond this early stage and shows extensive development in the uterus we should resort to operation and safeguard the life of the patient.

Objections to External Splints in Fractures.—H. E. Pearse, in *Kansas City Medical Index-Lancet*, gives the following objections to external splints: 1. It is impossible to see the ends of bone, hence impossible to secure accurate apposition of ends. 2. Breaks are never so transverse as not to slip sidewise on occasion. 3. Portions of fascia and muscle will become misplaced and engage between the ends of bone. 4. The hemorrhage from broken bones does not stop until the parts are packed with a blood clot that must be absorbed and whose presence increases the stiffness and uselessness of the mended member. 5. External splints applied over the parts, separated from the actual broken bone by the muscle, fat and skin, cannot hold the parts in more than indifferent position and then only by exerting undue pressure on the soft parts. 6. Too often one fragment is too short to afford proper bearing for the splint and thus maintain the axis of the bone in proper position. 7. Every factor of the external splint process used to maintain apposition—splints, bandages, pressure, extension and rest—all these tell against nutrition. 8. Early motion, which is the panacea for stiffness and loss of function, must be sacrificed to the need for bony apposition.

INSECT CARRIERS OF TYPHOID FEVER*

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The events brought about by the Spanish-American war marked the beginning of the greatest epoch in the history of preventive medicine in America. The arrest of the growth and propagation of certain mosquitoes—anopheles, culex, and stegomyia—has blazed the way for the greatest achievements of modern times.

FLIES

Insect carriers of disease have not, until a comparatively recent date, received any impressive attention from medical observers. The mosquito was, perhaps, the first insect to receive due attention. Its importance as a host in malaria, yellow fever, and other diseases has been thoroughly established.

The common house-fly (*Musca domestica*), since time immemorial, has been a common nuisance of all countries, civilized and uncivilized. My first observations of the house-fly as a carrier of disease were made in army camps during the Spanish-American war. It is well known that the army camps of this war were veritable hotbeds of typhoid fever. Some outbreaks could be readily traced to the water-supply; in other camps, where the water was free from contamination, the cause of the spread of typhoid was at that time unknown. Other observers (Veeder, Craig, Austen, Stalham, Oldham) have connected the fly with the transmission of typhoid in army camps.

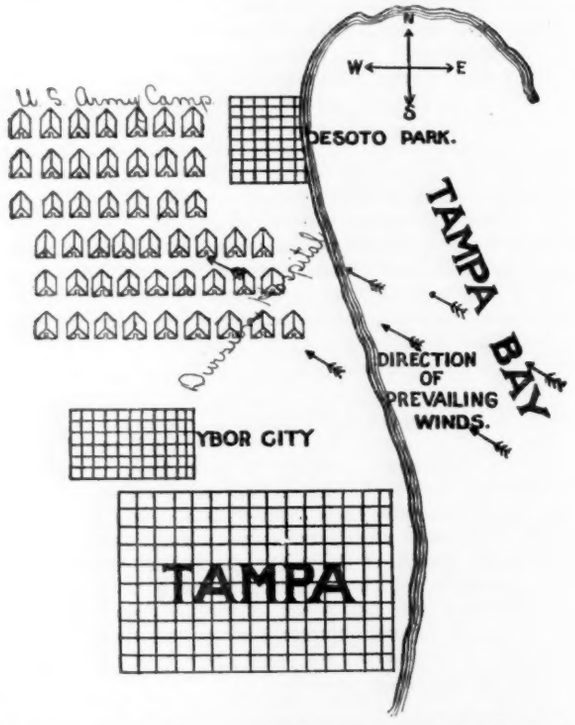

Fig. 1.—Map showing the location of part of the U. S. Army camp at Tampa, Fla., July, 1898. The arrows show the general direction of the prevailing wind and indicate how infected flies were carried from hospital, latrines, etc., to other parts of the camp.

While stationed at Tampa, Fla., in the early summer of 1898, I observed that the larger outbreaks of typhoid took place and spread in the direction of the prevailing wind. I did not fathom this peculiar phenomenon until Sergeant Brady was stricken with typhoid fever at Fernandina, Fla., some months later. He mentioned to me that the lime used about the latrines and garbage dumps was carried by flies to the food which we were using. After investigation, I found that the flies did not only carry lime, infectious matter, and other foreign material, but that they traveled in the direction of the prevailing wind.

Dr. Thomas S. Anderson, of Pittsburg, has recently confirmed and observed the factor of the prevailing wind in the spread of typhoid. In a symposium on typhoid fever before the Allegheny County Medical Society, Pittsburg, Pa., held April 20, 1909, Dr. J. F. Edwards, superintendent of the Bureau of Health, said

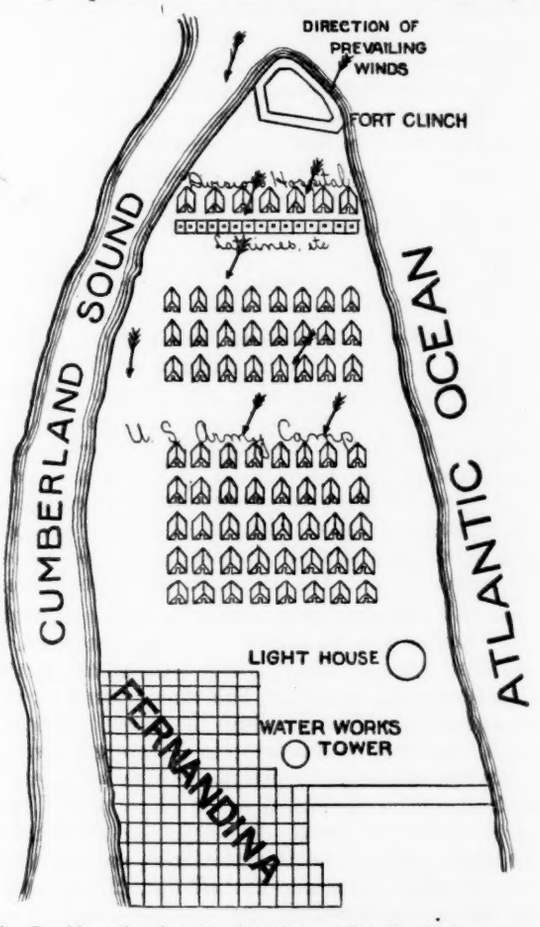

Fig. 2.—Map showing the location of the U. S. Army camp at Fernandina, Fla., 1898. The arrows show the directions of the prevailing winds and indicate the direction flies were carried from infected sources to different parts of the camp.

that with the many open box privy vaults in the densely populated parts of the city the possibility of flies as carriers of disease might be a factor, but that his department had no knowledge that such was the case. Pittsburg until recently had one of the largest typhoid mortality rates of any municipality in the world. Thus, one notes how easy it is to overlook some of the most important factors in the transmission of typhoid.

According to the investigations of Dr. Hamer, of the London County Council, the most productive of all factors in the fly genesis are accumulations of horse manure, but collections of dust and other refuse act as breeding-grounds. He states further that children, dirty walls and ceilings, particles of food on the floor and in sinks, are influential in attracting flies.

It has been shown that flies may carry typhoid fever germs in a living condition for over two weeks. Ex-

*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

periments have shown that typhoid bacilli may pass through the intestinal tract of the fly and remain alive. The germ is not so readily carried in the body of the fly as on its hairy feet. The urinals, linen, and even the mouth and rectum, as seen in many army camps, are places most likely for the fly to frequent, and thus pick up germs and become a most potent medium for the dissemination of the disease.

The true or common house-fly (*Musca domestica*) commonly lays its eggs on horse manure (its favorite food), cow manure, human excrement, and decaying animal and vegetable material. Howard has found that in midsummer each female lays 120 eggs, which hatch in eight hours, the larval period lasting five days, making the total time for the development of the generation ten days. This was at the end of June in Washington, D. C. The periods of development vary with the climate, season, and food. In the climate of Washington there is ample time for the development of twelve generations every summer (Howard).

Pomace-flies, or little fruit-flies, are commonly seen about decaying fruit and other decaying vegetation (Howard). The most abundant and widespread species is *Drosophila ampelophila,* the vine-loving pomace-fly

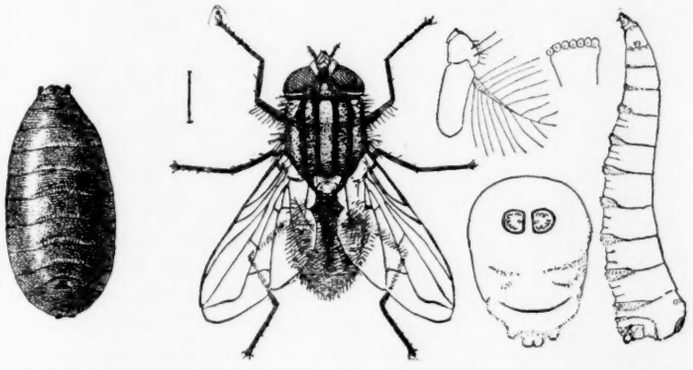

Fig. 3.—Common house fly (*Musca domestica*) : Puparium at left ; adult next ; larva and enlarged parts at right. All enlarged. From circular 71 (by L. O. Howard), Bureau of Entomology, U. S. Department of Agriculture.

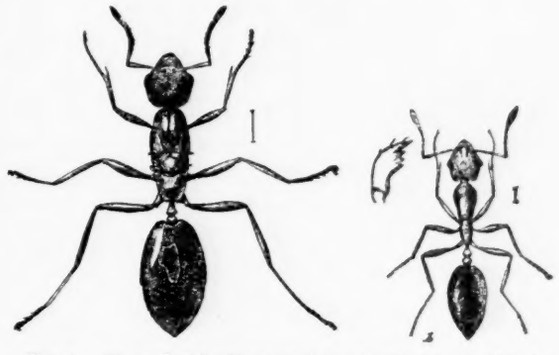

Fig. 4.—The red ant (*Monomorium pharaonis*) : A, female ; b, worker. Enlarged. From circular 34 (by Riley), Bureau of Entomology, U. S. Department of Agriculture.

(Kellogg). These flies are frequently found feeding on table fruits such as pears, peaches, plums, grapes, and apples. Fruit furnishes both food and a place for oviposition for these insects. Kellogg has observed: "The larvæ or maggots hatch in three to five days, live in the fruit four days, and lie in the pupal stage three to five days, so that the life cycle is gone through in less than two weeks."

It is difficult to rate the importance of the pomace-fly as a carrier of disease. Howard has recently shown that these flies are attracted to dangerously foul substances, and that they may be responsible for the spread of certain diseases. Their method of dissemination of disease is much the same as that of the house-fly, with this exception that pomace-flies often breed in the food used by man, and their significance as carriers of typhoid bacilli can not be overestimated. In Pittsburg, September, 1908, I secured cultures from pomace-flies found in a garbage-can in which excreta had been thrown, and within one hundred feet of a restaurant where hundreds of people dined daily.

HOUSE-ANTS

The most important species of ants found in houses is the little red ant (*Monomorium pharaonis L.*), the little black ant (*Mouomorium minntum Mayr*), and the pavement ant, of the Atlantic seaboard (*Tetramorium cæspitum L.*).

Perhaps the little red ant is the most thoroughly domesticated. It passes its entire existence in or about houses, having its nest in the walls or beneath the flooring, or in other places favorable to rapid ingress or egress near articles of food.

The habits and life histories of these several species of ants are much the same. The specimens usually seen in houses are all workers. The colony itself contains the larger wingless females, and at the proper season the winged males and females. During the greater part of the year the colony consists mostly of workers with one or more perfect wingless females.

In squalid homes, where the garbage-pail is used for the deposit of excreta, etc., it can be readily understood how these insects may become carriers of typhoid infection.

COCKROACHES

The cockroach is among the commonest and most offensive of insects which frequent human habitations (Marlatt). The American roach (*Periplaneta Americana*) is the commonest of domestic species found in America. The house roach is particularly abundant in pantries, kitchens, store-rooms, and especially in the neighborhood of well-heated apartments. It conceals itself during the day behind baseboards, refrigerators, boxes, furniture, in damp or moist cracks about sinks, and wherever protection from light is afforded. Unless routed out, or suddenly uncovered from their hiding-places, roaches are rarely seen. If discovered, they make off rapidly for other secure hiding-places. Domestic roaches congregate in large numbers at night and feed on almost any kind of food, dead animal matter, cereal products, leather, cloth, and such other materials as may suit their fancy for food or destruction. It is said that roaches are occasionally cannibalistic. They seem to be natural enemies of the bedbug, but as they do not usually frequent the places inhabitated by the bedbug they are not valuable as exterminators of that insect. Roaches travel from place to place, wherever their instinct may lead, to fertile fields for foraging.

Marlatt says:

> The roach, in its different stages from egg to adult, shows comparatively little variation in appearance or habits. The eggs, instead of being deported separately, as with most insects, are brought together within the abdomen of the mother into a hard, horny pod or capsule which often nearly fills the body of the parent. On hatching, it is said, the young are often kept together by the parent and brooded over and cared for; at least, a colony of young will usually be found associated with one or two older individuals. The common American roach (*Pariplaneta americana*) has been carried from egg to the adult state in our insectary. Young hatching July 11

from an egg-case received from Eagle Pass, Texas, reached the adult stage betweeen March 14 and June 12 of the following year, indicating a period of twelve months for development. The rate of growth undoubtedly depends very largely on food and temperature.

The omnivorous habits of the roach make it a prolific source and a ready carrier of disease. Engelmann has observed the relation of the cockroach to the conveyance of typhoid infection. It may carry disease from the source of infection on its body and limbs, or, by excreta, to drinking or other vessels used about the household, or even into the food.

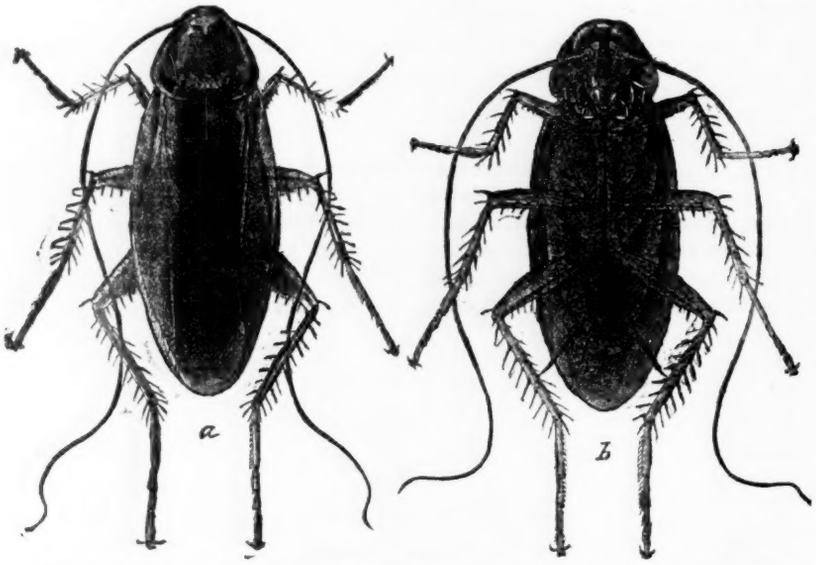

Fig. 5.—The American roach (*Periplaneta americana*): A, view from above; b, from beneath. Both enlarged one-third. From circular 51 (C. L. Marlatt), Bureau of Entomology, U. S. Department of Agriculture.

HOUSE-FLEAS

The human flea (*Pulex irritans L.*) and the dog and cat flea (*Ctenocephalus canis, Curtis*) are among the common nuisances found in houses in this country. Howard maintains that the flea most likely to be found in dwellings in this country is the cosmopolitan flea of the dog and cat. My observations, however, do not tend to confirm this, except in homes where these animals are kept. The human flea (*Pulex irritans*) is the prevailing flea of our country, and more especially in stock-raising districts. In small villages, where the homes are well-shaded and with a tendency to dampness, human fleas may be found in abundance. I have known an entire village to be infested with fleas after a drove of hogs and cattle had been driven through it. Homes that are damp during the summer are most liable to be infested with fleas.

The eggs of the *Ctenocephalus canis* are deposited among the hairs of dogs, cats, and numerous other animals. They may be deposited where animal material is free. There they develop and live until full grown. In warm, damp weather a generation may develop in a fortnight.

The flea, as a factor in the dissemination of plague and some other diseases, has been so fully established that it does not call for further comment here. The flea as a carrier of typhoid has not been so thoroughly brought out. From some 500 human fleas which were allowed to suck the blood of typhoid patients I have secured twenty cultures. Typhoid cultures were secured from 5 out of 650 of the dog and cat fleas. The extreme difficulty in securing the fleas, keeping them in captivity, and placing them in an artificial environment after possible injury, gives, I believe, a good reason for the small percentage of cultures. I am fully convinced, as were my confrères, that two of the cases which came under my service were inoculated by the house-flea.

BEDBUGS

The bedbug (*Cimex lectularius L.*) is the most loathsome insect infesting the habitations of man. It is commonly found in the homes of the squalid, yet it may be found in the palaces of kings. It is found in the cracks and crevices of old houses, in old mattresses, bedsteads, and more especially when these are approximate to human beings. It is nocturnal in its habits and inactive in cold weather. The food of the bedbug is normally human blood, yet it may subsist for a time on other substances. The eggs of the bedbug are laid in such places as are used by them for concealment. They are laid in clusters, each cluster containing six to fifty eggs. The period of growth, from the egg to the adult, varies greatly with temperature and food supply (Howard). Under ordinary conditions eight or ten weeks is necessary for rearing a generation of bedbugs.

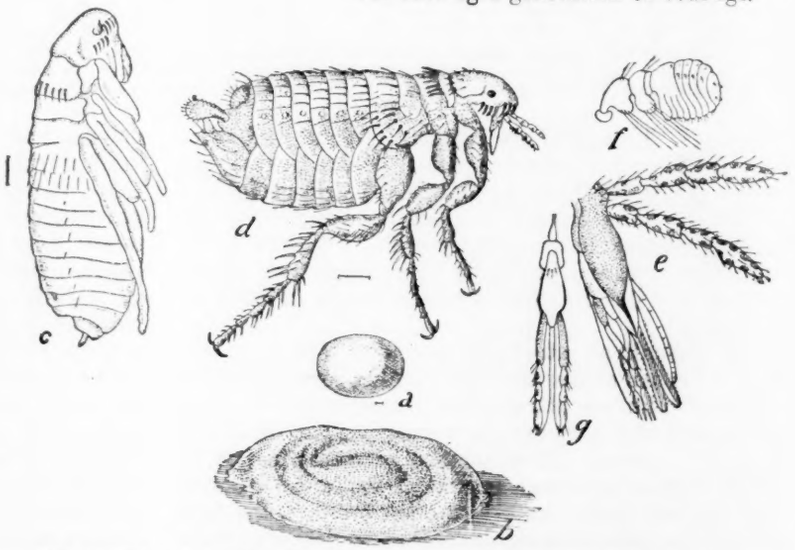

Fig. 6.—Cat and dog flea (*Ctenocephalus canis*): A, egg, b, larva in cocoon; c, pupa; d, adult; e, mouth-parts of same from side; f, antenna; g, labium from below; b, c, d, much enlarged; a, e, f, g, more enlarged. From circular 108 (by L. O. Howard), Bureau of Entomology, U. S. Department of Agriculture.

The bedbug has been found by observers to be a factor in the transmission of various diseases, as tuberculosis and relapsing fever. I believe that my investigations, covering a period of three years, have a prior claim over that of others in respect to the transmission of typhoid bacilli by the bedbug. I had observed among Poles, Italians, and Russians, in filthy quarters, where the beds had been used by typhoid patients, that succeeding occu-

pants were stricken with typhoid. I had noted that after having been bitten with bedbugs, in from eight to fifteen days they were attacked with typhoid.

This disease-carrying factor was suggested to an Italian tenant of one of a number of typhoid-infected houses, with the advice that the beds be destroyed by fire and the house fumigated. The advice was refused. To test the case, the man offered himself for experiment. I collected some bedbugs, starved them for several days, then placed them on the abdomen of his 8-year-old daughter, who had typhoid, incarcerating them under a square piece of a fleece-lined undershirt, fastened at the edges with zinc oxid adhesive plaster. In six hours the bugs, satiated with blood, were imprisoned between soiled pieces of canvas and allowed to remain twenty-four hours. They were then transferred to the abdomen of the father, imprisoned in the same manner as on the child, and allowed to remain twelve hours. It was noted that only about one-third of the bugs had bitten the subject. After removal, the bugs were crushed between glass slides and cultures made. These cultures showed the Eberth bacilli. Unfortunately, a few of the bugs escaped and fed on the blood of an 11-year-old boy, with whom the subject was sleeping. The father developed typhoid of the most virulent type in fourteen days and the boy in twelve days. The vitality of the *Bacillus typhosus* in the bedbug persists for several weeks, without any apparent lessening in virulency. In the case of the boy referred to above, the virulency was greatly increased.

MOSQUITOES

There are some 300 different mosquito species in the world, representing two dozen distinct genera. In North America, there are sixty species, representing ten genera. In the family Culicidæ are included two distinct types of mosquito, one with mouth-parts forming a long, slender, sucking proboscis, provided with sharp, needle-like stylets for piercing, the other with mouth-parts short and better adapted for lapping or supping liquids (Kellog). Two genera have a mouth of the latter type; all the others are piercers and blood-suckers. The females normally feed on plants, but when opportunity offers they feed on the blood of warm-blooded animals. Three genera of the piercing type are of special importance and interest to the medical profession, because of their relation to the development, incubation and dissemination of certain diseases of man and beast. These three genera are the *Culex, anopheles* and *Stegomyia* and, according to Kellogg, may be distinguished as follows:

Palpi (the mouth-feelers projecting by the side of the proboscis) long in both male and female, about as long as the proboscis: *Anopheles*. Palpi as long as proboscis in male, but only one-third as long in female. Scales on the head narrow and curved: *Culex*. Scales on the head flat and broad: *Stegomyia*.

Stegomyia and *Culex* are the breeders and disseminators of yellow fever and filariasis, and to the anopheles is given the responsibility of the breeding of malaria. I have been able to make cultures, in two cases, from mosquitoes (anopheles) after they had been satiated with the blood of a typhoid patient. Although this is not enough clinical evidence to be conclusive, it marks a starting-point for further investigations. I believe, however, that I am not alone when I say that mosquitoes may be active disseminators of many other diseases.

It is generally conceded that the larvæ of mosquitoes are aquatic, yet they are air-breathers. They are rapid breeders and may pass through several generations in the course of a year. The duration of a single generation may be twelve days. As adults, they hibernate and may be found during winter months in houses, barns, cellars, cisterns, culverts, etc. Mosquitoes do not fly far, but may be carried by light continued winds considerable distance from their breeding-places. An important factor to be noted in the spread of yellow-fever epidemics, as well as other insect-carried diseases, is the direction of the prevailing wind.

REMEDIES

Hydrocyanic-acid gas is one of the most effective remedies against household insects. The cyanid and gas is a deadly poison, and great care should be used when a house is fumigated. Some old remedies are insect powder (as pyrethrum), benzine, kerosene, corrosive sublimate, oil of turpentine, fumigation with sulphur, bisulphid of carbon, and traps. Many insects have natural enemies; as the roach and red ant against the bedbug, the ichneumon fly and tree-frog against the roach. A careful screening of windows and doors during the summer months, the use of sticky fly-paper and the elimination of breeding- and feeding-places will soon abate the fly nuisance. The means and methods of attack on the mosquito have been clearly delineated in recent literature by Gorgas, Guiteras, White and others. I will say in passing that by draining swamps, ponds and pools, the introduction of petroleum and other substances to kill the larvæ, the dissemination of dragon flies, and the screening of houses, cisterns, barrels, etc., leaves little for the pest to thrive on.

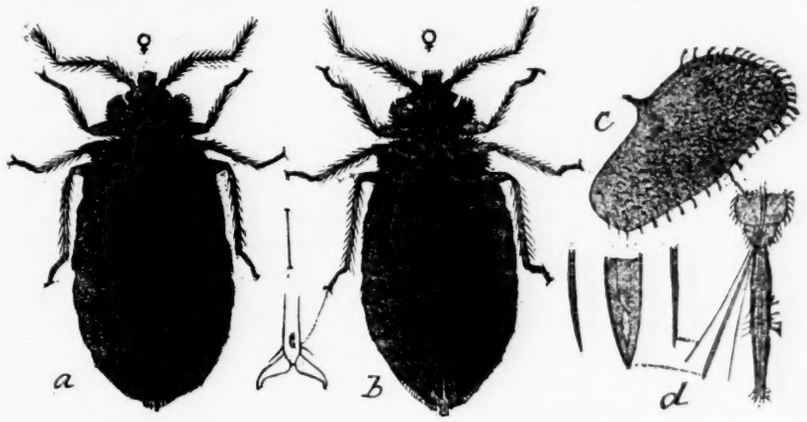

Fig. 7.—Bedbug (*Cimex lectularius*): A, adult female, gorged with blood; b, same from below; c, rudimentary wind-pad; d, mouth-parts; a, b, much enlarged; c, d, highly magnified. From circular 47 (by C. L. Marlatt), Bureau of Entomology, U. S. Department of Agriculture.

The stools and urine of typhoid patients must be disinfected with chlorinated lime, or by cremation the moment voided. Especial attention should be given to the antiseptic toilet of the mouth, nose, anus and meatus urinarius. Bedding, utensils and such articles as may come in contact with the patient should be scrupulously guarded and disinfected. These precautions are valuable and necessary under any and all circumstances, but we are somewhat nonplussed when we have to deal with the human carriers of typhoid bacilli.

All mosquitoes, bedbugs, and fleas, which have sucked the blood of typhoid patients, contain typhoid bacilli.

The virulence and vitality of typhoid bacilli are preserved in these insects. Typhoid bacilli may be found in these insects from eight to twenty-one days after they have sucked the blood of a typhoid patient. The feces of these infected insects contain virulent bacilli as long as they persist in the alimentary canal or in the blood or secretions. Insects which have fed on patients infected by bacilli of high virulence by means of bites convey infection of equal virulence. The local inflammatory reaction of patients to bites of these infected insects is slight, and, in fact, no more than from the uninfected insect. Infected insects may communicate the disease for two or three weeks after infection. The injury to the skin caused by the bites of mosquitoes, bedbugs, or fleas offers an avenue of infection for typhoid bacilli. The bed-linen fabrics, or other material, on which infected insects may be crushed, offers a ready source of infection. All insects which feed on excreta, animal or vegetable material, and which frequent, breed and hatch in or on, or come in contact with material infected with typhoid bacilli will become carriers thereof.

It may be argued that these insects do not bear a sufficiently important relation to the transmission of typhoid fever to be of value to preventive medicine. It is true that the evidence is not as convincing as it might be, but when we consider the unfavorable conditions under which investigations must necessarily be made it is certainly an important problem well worthy of further study. Occasionally the investigator is enabled to secure insects immediately after they have become infected, but generally he must work with captive insects, using artificial means, in a strange environment. Thus his efforts are often thwarted, and persistence, perseverance, and an immense amount of systematic work is necessary to secure positive results. The isolation of a pure culture of typhoid bacillus from the blood of suctorial insects is no small matter. The isolation of the bacillus from the alvine discharges is even more difficult. Yet these insects are marvelous factors in the dissemination of the typhoid bacillus.

I should like to voice the sentiments of Dr. White as to the importance and significance of the study of entomology by physicians. It is a field practically untilled; yet some of the greatest advances of preventive medicine in modern times are due to the work of those who have labored therein. The pioneer work of Laveran, Manson, Ross, Sternberg and others initiated the campaign against the malaria-bearing mosquitoes. The subsequent researches of Manson and Bancroft have proved that filariæ are transmitted by mosquitoes. The suggestion, based on observations by Dr. Charles J. Finlay of Havana, that mosquitoes might be agents in spreading yellow fever was slightly regarded and even contemptuously received by investigators. It remained for the Army Yellow Fever Commission, in 1900, to report that yellow fever followed the bite of mosquito species, *Stegomyia fasciata*. Eminent investigators (Reed and Lazear of America and Dutton of Liverpool) lost their lives from attacks of the disease they were studying, caused by insects. The work that these pioneers had so nobly advanced has been efficiently maintained by Gorgas, White, and others associated with them in their work.

In this brief account of the rôle that certain insects play in the propagation and dissemination of typhoid fever, only a small part has been told. I believe that within two years observers will be able to find that insects are the disseminating medium of various other diseases. The medical profession and laity are fortunate to have the government bureau of entomology, under the efficient direction of Dr. L. O. Howard, it having made possible many advances in preventive medicine.

The study of entomology and its relation to disease is comparatively recent, and it offers one of the most prolific and promising fields in preventive medicine.

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TYPHOID IMMUNITY AND ANTITYPHOID INOCULATION *

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The difficulties attending the diagnosis of mild types of typhoid fever have made the study of the duration of immunity conferred by an attack a perplexing one. The differentiation of typhoid-like, paratyphoid, colon and paracolon infections is by no means easy, even for those so fortunate as to have at their disposal ample facilities for conducting blood culture and agglutination tests against strains of all the bacteria mentioned.

Typhoid simulating mild types of meningitis, early tuberculosis and many pneumonias with delayed resolution, likewise malarial fever (so-called) is frequently overlooked. In our hospital wards one rarely hears, in taking the history of a typhoid case, reference to an earlier attack. Most writers agree that, as in many other acute systemic infections, one attack is sufficient to produce a probable, although not absolute, immunity against later attack. Dreschfeld's figures, based on 2,000 cases in the Hamburg General Hospital, show that only 0.7 per cent. were affected twice. It is extremely probable, however, that the actual incidence of attack in individuals once infected is much greater than these figures indicate because of lack of facility in the way of accurate laboratory and clinical observation in many localities where the disease is prevalent.

The various antibacterial substance elaborated in the blood and the tissue fluids of an infected individual serve, however, in a large percentage of cases to protect against subsequent attack. These antitropic substances, the agglutinins, lysins, bactericidins and latterly the bodies concerned with phagocytosis (the opsonins and stimulins), are distinctly antibacterial rather than antitoxic in their function. The process of immunization in typhoid is, according to present knowledge, a matter of specific reaction on the part of the body cells to the protein molecule making up the cell structure of the bacterium. This reaction is specific for the protein molecule exciting the reaction on the part of the body cells and take place, according to Vaughan and Wheeler,[1] through the liberation of a specific ferment which is activated or liberated through excitation by the proteid in question, whether bacterial, animal or vegetable. Such specific reaction in the process of immunity protects only against the specific proteid derivative which calls it forth; that is to say, the proteid derivatives obtained from colon bacilli protect, when inoculated, only against colon bacilli. The reaction is specific in the sense that the antibacterial substances elaborated under the influence of an infection are protective only against that infection.

THE BLOOD CHANGES DURING AND FOLLOWING AN ATTACK OF TYPHOID FEVER

Agglutinins.—During the second week of typhoid fever the agglutinins, in accord with general experience, are increased so that, on an average, the serum will agglutinate typhoid bacilli in dilutions from 1 in 100 to 1 in 200, exceptionally 1 in 400 or higher. After the decline of the fever there is rapid decrease in agglutinative value, the average being 1 in 60 or 1 in 80. For a few months to one year or longer this value remains low at about 1 in 40 to 1 in 60. (In my own case eighteen months after an attack of typhoid the serum would agglutinate in dilutions of 1 in 60.) Exceptionally a very high agglutinative value may be obtained as mentioned by Leishman and Harrison,[2] who refer to one patient whose serum, six months after the commencement of the illness, would agglutinate in dilutions of 1 in 1000.

Bactericidins.[3]—The bactericidal powers are increased, on an average, two or three times above the normal (which has more or less bactericidal power in dilutions from 1 in 10 to 1 in 20) during the first few weeks after the commencement of an attack. This power gradually falls at the decline of the fever so that the normal is reached at above the fourth month. Fatal cases may show a relatively high bactericidal power.

Opsonins.[4]—In contrast to the low bactericidal power of serum obtained during the decline of the fever and afterward, the opsonic index is relatively high. During the first few weeks of the fever the index is increased to 1.5 to 3.5. There is usually a slight decline during convalescence, although occasionally high indices may be obtained at this time. As a rule a high index, from 2 to 3, is found to persist for months after an attack. The only fatal case (bowel perforation at the end of the second week) I have been able to follow had a low index of 0.6 from the beginning. The general impression is that cases manifesting a persistently low index have a less favorable prognosis. This may be true for the patients who die in typhoid from exhaustion, a relatively small number, when compared with those dying from hemorrhage or perforation. It is conceivable, on the other hand, that a low phagocytic power to destroy bacilli locally is responsible for extensive necrosis of an intestinal ulcer leading to such erosion as eventually favors hemorrhage or perforation.

Stimulins.—Heating a serum to 60 C. renders the opsonin it contains inert, at least for some strains of typhoid bacilli. On the other hand, some strains are more readily phagocytable when the serum is heated to 60 C. The substance remaining in the blood serum heated to 60 which is still capable of inducing phagocytosis has been called "stimulin." It is more stable than opsonin. In some cases cited by the Royal Army Commission, heated serums showed double the power to activate phagocytes over that obtained with unheated serums. The only statistics available in this connection are those of Leishman and Harrison,[2] who estimated the stimulin value of the serums of thirty-five typhoid patients by adding a small amount of their heated serums to heated normal serum which was then tested as to its power to stimulate the phagocytic activity of normal leucocytes. During convalescence and afterward the stimulin curve rises considerable above normal to 2 or 2.5, at about which points it is maintained for months after the attack.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Vaughan, V. C., and Wheeler, May S.: Experimental Immunity to Colon and Typhoid Bacilli, New York Med. Jour., June 22, 1907.

2. Leishman, W. B., Harrison, W. S., et al: Third Report on Experiments in Connection with Antityphoid Vaccine, Jour. Roy. Army Med. Corps, October, 1908.

3. To determine the bactericidal power of a serum progressive dilutions are mixed with a measured quantity of twenty-four-hour broth culture of bacilli and allowed to remain in the incubator at 37 C. for fifteen minutes. Agar plates are then inoculated with the mixture and the number of colonies which develop after twenty-four hours are estimated.

4. It makes some difference in the results obtained whether one uses the method of Wright or Klein in estimating the index; also whether a virulent or non-virulent strain is used for the bacterial emulsion.

PREPARATION OF ANTITYPHOID VACCINE

The early history of antityphoid inoculation concerned itself with the same problems which led up to the Pasteur methods of inoculation against rabies and anthrax or to the anticholera inoculations of Haffkine; i. e., by the use of attenuated living virus. Such methods of procedure in typhoid prophylaxis have seemed to be quite beyond the necessity of its scope. The pioneer work of Prof. R. Pfeiffer,[5] in 1896, who was able to obtain a specific agglutinin reaction in man by the injection of heated typhoid culture in two cases, led, through a personal communication to A. E. Wright, to the experimental work and the publishing of the results of two inoculations by him.[6]

To Wright belongs the credit of placing the method on a rational basis through many thousand preventive inoculations made in the British army in India and during the Boer War. The investigations carried on in the laboratories of the Royal Army Medical College under Leishman, as well as the stamp of approval placed on the results obtained by the Royal Army Commission and the Royal College of Physicians, to which was referred the question of the efficacy of antityphoid inoculation, has done much to dispel the skepticism with which it was first regarded.

Wright's method, with slight modification, has been followed since that time. In general as in the preparation of other bacterial vaccines the following principles are followed: 1. The vaccine must be capable of stimulating the production of protective typhocidins, lysins, agglutinins and opsonins (typhoid and cholera differ from many other acute infections in that bactericidins and bacteriolysins are largely limited to them). 2. The vaccine must not be so altered in its preparation by heat or chemical agents as to impair its immunizing properties. 3. The dosage employed must be sufficient to maintain a phase of increased resistance to infection for a considerable period.

In the earlier work the vaccine was prepared as follows: Broth cultures of non-virulent typhoid bacilli, after from 10 to 21 days' growth at 37 C., were standardized and exposed to a temperature of 60 C. for fifteen minutes, after which 0.45 to 0.50 per cent. phenol was added for purpose of preservation. Broth cultures cultivated for from ten to twenty-one days undergo considerable autolysis so that standardization is difficult, so that more recently twenty-four-hour broth cultures have been used (agar cultures twenty hours old may be used in the preparation of vaccine on a smaller scale). Overheating greatly impairs the immunizing properties of the vaccine. The thermal death point of most strains of typhoid bacilli is 53 C. (occasionally one may meet with an exceptionally resistant strain) at which point, at present, the bacterial suspension is maintained for one hour.

The addition of phenol or liquor cresolis compositus to the vaccine when hot destroys its immunizing efficacy. Liquor cresolis compositus (0.25 per cent.), which is largely used, is sufficient to preserve the vaccine against contaminating anaërobes or spore-bearing bacteria. Phenol is in some respects superior to liquor cresolis compositus, since the cloudy, at times clumpy, masses found in some cresolized salt solutions are avoided. I have more recently avoided heat in the preparation of the vaccine. Harrison[7] has shown that 0.2 per cent. compound solution of cresol is sufficient to inhibit the growth of typhoid bacilli in broth, while Leishman and his co-workers[8] have shown that 0.25 per cent. liquor cresolis compositus added to unheated typhoid vaccine is sufficient of itself to render it sterile in twenty-four hours. Moreover, vaccine prepared by the simple addition of liquor cresolis compositus without heat is capable of inducing in rabbits a rise in agglutinins, bactericidal substances and in substances concerned with phagocytosis. I have more recently added 0.4 to 0.5 per cent. phenol in normal salt to the bacterial suspension *without* heat in the preparation of the vaccine. The vaccine is sterile in forty-eight to seventy-two hours. Such vaccines seem to produce a rise in the antibodies concerned with immunization in smaller dosage than vaccines killed by heat. On the other hand, it should be noted that heating a typhoid vaccine to 53 C. for one hour does not impair it.

Along this line it may be of interest to mention certain results obtained with other chemical agents used to devitalize bacterial vaccines without heat. Acetozone in saturated solution, 1 to 1,000, was used as a diluent. A suspension of three strains of typhoid bacilli containing approximately 5,000,000,000 per c.c. was diluted with twenty volumes of acetozone, 1 in 1,000. The suspension was sterile in forty-eight hours. Doses of this vaccine when inoculated in one individual produced after fourteen days an agglutinative reaction in one-half hour after administration, with a 1 in 500 dilution of the serum.

Acetozone, 1 in 1,000, in doses of 1 to 2 c.c., is non-irritating when injected subcutaneously. A 1-in-2,000 acetozone solution failed to sterilize a vaccine made from an avirulent strain in five days. A saturated chloretone (0.5 to 0.7 per cent. with heat) in normal salt (after a suggestion by Dr. Willard H. Hutchings) would sterilize unheated bacterial suspensions of typhoid containing 1,000,000,000 and 2,000,000,000 per c.c., respectively, in twenty-four hours, but the vaccine containing 2,000,000,000 per c.c. germinated and a diffuse growth on agar was obtainable after seventy-two hours, while the 1,000,000,000 vaccine was still sterile after ten days.

Macfadyen[9] suggested in 1903 a method of preparing typhoid vaccine by trituration and grinding, such as is used in the preparation of Koch's new tuberculin. Such a method, without the security of sterilization, involves the risk of transmitting infection and does not produce a more potent vaccine. Among the other methods which have been tried may be mentioned the use of "washed bacteria" as a vaccine; bacterial suspensions killed by chloroform vapor, and vaccine killed by the addition of 20 per cent. neutral glycerin. All of those methods produce a rise in the substances concerned with acquired immunity, but no more effectively than the standard vaccine. Harrison has used typhoid bacilli in glycerin emulsion by mouth, also sterile typhoid bacilli suspended in fat and enclosed in gelatine capsules, by mouth. Although it appeared possible to increase slightly the antibacterial elements in the blood by such methods of administration the results, on the whole, were not as satisfactory as those obtained by subcutaneous inoculation.

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6. Wright, A. E.: Lancet, London, Sept. 18, 1896.
7. Harrison, W. S.: Report on Experiments in Connection with Antityphoid Vaccine, Jour. Roy. Army Med. Corps, May, 1907.
8. Leishman, W. B., et al: Report on Further Experiments in Connection with Antityphoid Inoculation, a continuation of work published in Jour. Roy. Army Med. Corps for May, 1907.
9. Proc. Roy. Soc., 1903, quoted by A. E. Wright in A Short Treatise on Antityphoid Inoculation, London, 1904.

THE RELATIVE EFFICIENCY OF VACCINES PREPARED FROM VIRULENT AND NON-VIRULENT STRAINS

The earlier work done with various strains of typhoid bacilli, as in the preparation of other vaccines, seemed to convey the impression that virulent strains, when injected, produced a more decided rise in protective antibodies than vaccines prepared from non-virulent, long-cultivated strains. This impression has not been borne out by facts. A typhoid vaccine prepared from a single non-virulent strain is quite as capable of inducing a sufficient immunizing response as vaccine prepared from two or more virulent strains. This protection exists against other non-virulent strains and also against single or multiple virulent strains.

DURATION OF POTENCY OF TYPHOID VACCINES

Typhoid vaccine six months or more old is apt to lose a considerable amount of its immunizing potency. Vaccine three months old has been found by Leishman and Harrison to be as potent as when freshly made.

To be on the safe side, vaccine not over three or four months old should be used. Extreme degrees of heat or cold seem to affect the immunizing qualities of a vaccine if kept for a considerable period under such conditions. Room temperatures seem best suited for preservation.

METHOD OF ADMINISTRATION AND DOSAGE: THE LOCAL AND GENERAL REACTION

Although a considerable immunity results from one inoculation of 500,000,000 to 1,000,000,000 bacilli, this immunity may be much augmented by a subsequent injection of 1,000,000,000 ten to fourteen days. The Royal Army Commission, appointed in October, 1904, found that an interval of about ten days should separate the doses. The first dose consists of 500,000,000 to 1,000,000,000 and the second from 1,000,000,000 to 1,500,000,000. The injections are conveniently given subcutaneously on the outer side of the upper third of the arm near the point of insertion of the deltoid, or subcutaneously in the abdominal wall. The needle should not puncture the muscle, as pain is produced and a considerable local reaction follows. The site of injection usually becomes reddened and slightly tender to touch, but these local manifestations disappear in about twenty-four hours. The first dose of vaccine does not, in my experience, produce any marked degree of reaction, local or general. Occasionally in a hypersusceptible subject the general reaction is severe. This is manifested by a feeling of malaise and headache with more or less general muscular aching and a temperature which may reach 100 or 101 F. for a few hours. This general reaction is more apt to occur after the second injection of 1,000,000,000 to 1,500,000,000, but it disappears within twenty-four hours. Patients are seldom required to give up their work. The best time for administration of the vaccine is in the late afternoon so that rest may be secured early in the evening.

THE BLOOD CHANGES AFTER PREVENTIVE INOCULATIONS AND THE DURATION OF IMMUNITY

Agglutinins.—The agglutination curve begins to rise about nine days after an inoculation and reaches on an average 1 in 500 to 1 in 1,000 by the tenth or eleventh day. The average has been about 1 in 500 in my cases. Occasionally a very high agglutinative point may be reached as in a case cited by Shoemaker,[10] in which eleven days after the first inoculation agglutination was obtained in a dilution of 1 in 12,800.

The immediate effect of the second inoculation may be temporarily to lower the agglutinative value reached as a result of the first inoculation, for twenty-four to thirty-six hours, but the value is then increased, reaching in some cases 1 in 1,200, 1 in 1,500, to 1 in 8,000. Such a high point may be maintained for a number of months, but a decline manifests itself within a year, at the end of which time the serum will usually agglutinate bacilli in dilutions of 1 in 100 or 1 in 200. Harrison has reported agglutinin reactions in dilutions of 1 in 30 four years after inoculation and complete reactions in dilution of 1 in 20 after six years.

Bactericidins.—The bactericidal substances are increased fourfold or fivefold by the inoculations. There seems to be less decrease in these substances after considerable time than in the agglutinin value of the serum. For example, Harrison has found the bactericidal value four times the normal one year after inoculation; three or four times the normal after four years, and two and one-half times the normal after six years.

Bacteriolysins.—The bacteriolytic substances are likewise increased. Serums from inoculated subjects diluted 1 in 5 to 1 in 10 and mixed with living typhoid bacilli cause either complete disappearance of the organisms or their reduction to amorphous masses.

Opsonins and Stimulins.—The opsonic index is markedly increased, reaching often 2 or 2.5 after the first and 3 to 5.5 after the second inoculation. Stimulins are also increased; serum after the inoculations when heated to 60 C. gives from one and a half to two times the power to activate phagocytes over that shown by unheated serum. In general the results obtained by Leishman and Harrison agree with those obtained by Klein,[11] who found, by dilution experiments, in immunizing rabbits by subcutaneous injections of living typhoid bacilli, that opsonins were considerably augmented. He also found that typho-agglutinins and lysins were increased and comparatively, that the opsonins and lysins increased more rapidly than agglutinins. The discrepant results obtained, as regards the opsonins, have been shown by Clark and Simonds[12] to be due to the use of different strains of organisms. Markedly divergent results may be obtained using different strains with the same serum. In fact, some strains, when freshly isolated, may give considerable spontaneous phagocytosis, while repeated transplantation of strains which do not induce spontaneous phagocytosis may render them very susceptible to phagocytes in the absence of serum. One strain virulent to rabbits may give a lower opsonic index with rabbit serum than a non-virulent strain, while again with the same serum another virulent strain may give a higher index than the non-virulent strain.

The duration of immunity produced by preventive inoculations has been variously estimated at from two to six years. In many cases the immunity probably lasts for life, although of this conjecture no definite proof exists. Whether the immunity following the inoculations in man is sufficient to ward off infection with virulent typhoid bacilli is not known. The striking preponderance of the substances which have to do with phagocytosis (opsonins and stimulins) stand out more clearly as evidence of increased protection following preventive inoculations than the other bacteriotropic substances concerned with this form of acquired immunity.

10. Shoemaker, H.: Observations on Prophylactic Inoculation Against Typhoid Fever, New York Med. Jour., Feb. 6, 1909.

11. Klein, H.: Johns Hopkins Hosp. Bull., 1907, xviii, 245.
12. Clark, C. P., and Simonds, J. P.: Jour Infect. Dis., 1908, i, 1.

THE PROTECTIVE POWER OF ANTITYPHOID VACCINE AGAINST PARATYPHOID INFECTION

Since the substances concerned with acquired immunity to typhoid have been shown to be largely those which pertain to phagocytosis, the opsonins and stimulins, it becomes a matter of interest to know whether the injection of antityphoid vaccine increases the phagocytic stimulating activity of the blood serum against paratyphoid infection. Clark and Simonds[12] find that "opsonins arising in typhoid fever are generally, if not constantly, equally capable of stimulating phagocytosis of paratyphoid bacilli," and, moreover, that the injection of either typhoid or paratyphoid vaccine caused a rise in the opsonic index for both organisms in rabbits. The index gradually increased after each injection. On the other hand, Leishman and his co-workers did not find that inoculations of antityphoid vaccine in man produced any increase in the phagocytic value or, for that matter, any increase in agglutinins or bactericidins, when tested against two strains of paratyphoid bacilli. In the light of these differences it may be concluded that the matter of protection against paratyphoid fever afforded by injections of antityphoid vaccine has not been settled.

CONDENSED STATISTICS RELATIVE TO ANTITYPHOID INOCULATION IN THE BRITISH ARMY AND THE ADOPTION OF THE PROCEDURE IN THE U. S. ARMY

Leishman[13] has recently given the results of inoculation in the second battalion of the Royal Fusiliers in India from December, 1904.

TABLE 1.—RESULTS OF INOCULATION IN ONE BATTALION

Strength of Regiment.	No. Inoc.	Admitted to Hospital to Date. Non-inoculated. Cases.	Deaths.	Inoculated. Cases.	Deaths.
12/31/1905, 883	103	2	0	0	0
12/31/1906, 1013	181	35	5	9	0

The statistics of the Seventeenth Lancers in India from October, 1905, are also very favorable. In a regiment varying from 508 to 680 men, 425 men were inoculated with antityphoid vaccine from October, 1905, to May 1, 1907. Among the inoculated men during this period, two developed typhoid with no deaths, while among the non-inoculated men there occurred 69 cases of typhoid with eleven deaths. Among the inoculated men, each of the two in whom typhoid occurred had refused to take the second dose of vaccine, which in the case of this regiment was prepared at 53 C. No case of typhoid has occurred in this regiment among the men who received two inoculations of this vaccine. In seven large India regiments the results have been as shown in Table 2.

TABLE 2.—RESULTS OF INOCULATION IN SEVEN REGIMENTS, JANUARY 1 TO JUNE 30, 1907

Strength.	Cases.	Deaths.	Incidence Per 1000	Mortality Per 1000
Non-Inoculated..8113	173	42	21.32 (+1.08)	5.18 (+0.54)
Inoculated.....2207	15	3	9.80 (+1.18)	1.36 (+0.53)

The latest statistics in the British army[14] up to June 1, 1908, relative to prophylactic inoculation are as follows: Among 12,083 men comprising sixteen regimental units, 5,473 were inoculated. These regiments were stationed in India, Egypt, Malta, Crete, South Africa, etc. The case incidence per thousand, taken as a whole, among the inoculated men, was 3.8, while among the non-inoculated men the case incidence per thousand was 28.3. Among those sixteen units in which typhoid occurred (typhoid did not occur in some of the regiments) the case incidence per thousand among the inoculated men was 6.6, while among the non-inoculated men the case incidence per thousand was 39.5.

In the U. S. army, the work begun last December, as a result of the conclusions reached by the medical board appointed for the purpose, is well under way. This board consisted of Surgeon-General O'Reilly, V. C. Vaughan, W. T. Councilman, J. H. Musser, A. Lambert, Simon Flexner, W. S. Thayer and Major F. F. Russell, of the Medical Corps, U. S. Army. The conclusions reached by them are as follows:

1. The board is convinced that the practice of antityphoid vaccination is both useful and harmless, and that it offers a practicable means of diminishing the amount of typhoid fever in the army, both in times of peace and war.

2. It finds that the experience to date with antityphoid vaccination justifies it in recommending the introduction of the practice in the regular and volunteer armies in time of war.

3. It recommends the immediate introduction of the practice of vaccination against typhoid in the Hospital Corps, the Army Nurse Corps, and in any expedition of troops from the regular army which is ordered to take the field for active operations; and further, that an opportunity be given to volunteers from the army as a whole to be protected by vaccination against typhoid.

The vaccination work is under the charge of Major Russell, of the Medical Corps, and is entirely voluntary.

THE INOCULATION OF ANTITYPHOID VACCINE IN TYPHOID-CARRIERS. IN ENDEMIC AND EPIDEMIC AREAS. GENERAL CONCLUSIONS

Investigations have established that about 4 per cent. of convalescent typhoid cases become chronic "typhoid-carriers," disseminating the infection more or less constantly with the feces and urine for periods of years.

Where new cases of the disease can, with fair degree of presumption, be traced by appropriate bacteriologic tests to such individuals, especially cooks, dairymen or dairymaids, workers in confectionery, waiters and waitresses or those who have to do with the handling of food in any way, the inoculation of antityphoid vaccine offers a more certain means of raising the bacterial resistance in such individuals than any other known method of treatment.

The method of antityphoid vaccination involves no risk and is especially applicable for those constantly exposed to infection, such as nurses, hospital attendants and physicians.

Antityphoid inoculations should be avoided if possible in individuals during the incubation stage of typhoid, for, although it is probable that the stage of diminished resistance (negative phase) for a few days following the inoculation is more theoretical than real, it is more wise, in the present state of knowledge, to avoid the possibility of cumulation.

In endemic areas, where a considerable proportion of the population annually suffers the infection, or in epidemic areas, where there is reason to suppose the possibility of widespread infection, inoculations of antityphoid vaccine are indicated in individuals not in the prodromal or incubation stage of the disease.

The Colton Building.

13. Leishman, W. B.: Antityphoid Inoculation in the British Army, Mil. Surg., 1908, xxii, 6.
14. Leishman, W. B.: Statistical Table of Recent Results of Antityphoid Inoculation, Jour. Roy. Army Med. Corps, 1908.

Deserves Publicity.—We quote from a recent case report: "This was a young lady, middle-aged. . . . I think such cases deserve as much publicity as possible."

EPIDEMIOLOGIC STUDIES OF TYPHOID FEVER *

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PREVALENCE OF TYPHOID FEVER IN THE UNITED STATES

Judging by obtainable figures, there are in the United States comparatively few communities of over 1,000 persons which during any period of twelve consecutive months within the past ten years have been entirely free from typhoid fever. The extensive prevalence of this thoroughly preventable disease in our country as a whole is beginning to be justly considered a national disgrace.

Communities, like individuals, seem to be as a rule unable to profit by the experiences of others, and the history of typhoid fever is replete with instances of communities having failed to carry out clearly indicated preventive measures until the occurrence among them of severe epidemics has caused an awakening.

NATURE AND SOURCE OF THE INFECTIOUS AGENT

At present the generally accepted view is that typhoid fever is an infectious disease caused by a specific parasitic organism, the typhoid bacillus. The undetermined elements in the causation of the disease are those concerned in the establishment of individual susceptibility to the infection and, in some instances, those concerned in the transmission of the infection. All known facts on the subject support the view that man is the permanent host of the parasitic organisms which cause typhoid fever, and that if their multiplication in and their dissemination by the human host could be prevented these organisms would soon perish from the earth. Therefore, what appears a sound belief, based on epidemiologic findings, is that "each and every case of typhoid fever comes somehow from some previous case." (Sedgwick).

PREVENTION OF INFECTION

The specific parasite which causes typhoid fever and its permanent host being known, an apparently simple formula to prevent the disease is to destroy the infection as it leaves the bodies of infectious persons. Could such a plan of action be made sufficiently wide in scope it would promise success; but the people of a given community may use water, milk and various foodstuffs obtained from a distance and liable to contamination with the excreta of infectious persons over whom their own health officials have no jurisdiction. Therefore, for the local health officer the two principal plans of action to prevent typhoid fever in his community should be the following:

1. The discovery of and the prevention of the spread of infection from persons in his community who harbor infection (typhoid fever patients and bacillus-carriers).

2. The prevention of the introduction of infection into his community from without through various channels, such as the water-supply, milk-supply, and the general food-supply.

DETERMINATION OF IMMEDIATE SOURCES OF INFECTION

In order to determine the principal immediate sources of the infection in a locality careful epidemiologic studies are necessary. Explosive outbreaks, such as those produced by highly infected water or milk, present rather characteristic features, and as a rule epidemiologic studies of these will point out quite readily and definitely the source of the infection. But in communities where a high rate of prevalence of typhoid fever is maintained for years and is due to a number of different factors which vary in relative extent of operation from time to time, the problem becomes very intricate and its exact solution exceedingly difficult.

Studies of all typhoid fever situations, however, should be conducted along the same general lines. Hasty conclusions, based on first-glance impressions, should be avoided. Every factor possibly concerned in the spread of the infection should be carefully considered and investigated. As the facts are collected one factor after another may be eliminated, until definite conclusions may be drawn as to the principal source, or sources, of the infection.

DIFFERENT TYPES OF TYPHOID FEVER SITUATIONS PRESENTED FOR STUDY

Large urban communities in which the disease has prevailed for a long time as a rule present complex typhoid fever situations. Here the conditions of life are complex. Large numbers of all classes of people are in close association. Foodstuffs are obtained from many sources and handled by many persons. In some instances the water-supply is obtained from a number of different sources. Small communities, usually free of the disease, when visited by sudden and extensive outbreaks, present, as a rule, simple typhoid fever situations.

During the last three years as a member of a board of officers[1] detailed by the Surgeon-General of the Public Health and Marine-Hospital Service to study the origin and prevalence of typhoid fever in the District of Columbia, I have been engaged in a study of a situation of the complex type; and recently I have conducted an investigation of an outbreak at the National Park Seminary at Forest Glen, Md., which was of the simpler type of typhoid fever situation. These two situations may be presented as a striking contrast:

THE TYPHOID FEVER SITUATION IN WASHINGTON, D. C.

Previous to 1906 there was quite a general consensus of opinion among those who had given attention to the subject that the high rate of prevalence of typhoid fever in Washington was due to the polluted public water-supply obtained from the Potomac River.

Effect of Filtration of the Public Water-Supply on the Typhoid Fever Rate.—In October, 1905, a filtration plant was completed and since then the city has been supplied continuously with filtered Potomac River water. During the winter and spring months following the installation of the sand filters there was comparatively little typhoid fever in Washington, but early in July, 1906, there occurred a great increase in the number of cases and the disease was properly regarded as prevailing in epidemic form.

This marked increase in the prevalence of typhoid fever with the advent of summer weather corresponded with the history of the disease in many previous years. The typhoid fever death rate for the calendar year 1906 was 49.3 per 100,000, while for the three years immediately previous to the filtration of the water it averaged about 44 per 100,000. Thus, the rate in 1906, the first year after the filtration of the water, was somewhat in

*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Surgeon M. J. Rosenau, chairman; Passed Assistant Surgeon L. L. Lumsden; and Prof. Joseph H. Kastle, recorder.

excess of the rates of the several years previous, despite the fact that the results of the bacteriologic analyses of the water showed that the filtration accomplished a very great reduction in the total bacterial content of the applied water such as was supplied to the city during the three years previous to filtration. In 1907 and 1908, the second and third years after filtration, the typhoid fever case and death rates in Washington were lower than in any other years of which there is record The typhoid fever death rate in 1907 was 34.5 and in 1908 36.5 per 100,000. The reduction in the rate in these two years is accounted for by the reduction which occurred in the summer typhoid. The rates in the winter, spring and fall seasons of the three years 1906, 1907 and 1908 were almost exactly the same.

An important question and one difficult to answer positively is: How much, if any, of the reduction in the typhoid fever rate in the summers of 1907 and 1908 was due to the improvement in the water-supply as the result of sand filtration? Had such a reduced rate been observed in the summer of 1906, the first year after the filters were put into operation, probably few if any would have doubted that the reduction in the summer typhoid had been accomplished by the improvement in the water supply.

Judged by bacteriologic standards we found the filtered water supplied the city in the summers of 1907 and 1908 was of considerably better quality than the filtered water supplied the city in the summer of 1906. The fact that the higher degree of improvement of the filtered water was followed by a reduction in the typhoid rate, to my mind, suggests cause and effect.

As a board we have not been able to decide definitely as to what part water-borne infection played in the causation of typhoid fever in Washington in 1906; but we are satisfied, by the results of our studies, that the Potomac River water previous to filtration caused much less of Washington's typhoid than was generally supposed, and that in the summers of 1907 and 1908 the public filtered water-supply played a relatively minor rôle, if any, in the causation of the disease.

Milk.—In the typhoid fever seasons (May 1 to November 1) of each of the three years, 1906, 1907 and 1908, we have definitely attributed about 10 per cent. of the cases originating in the District of Columbia to milk-borne infection. These cases occurred in the course of pronounced milk outbreaks among the customers of certain dairymen.

In the season of 1906 there were three such outbreaks, in the season of 1907 one, and in the season of 1908 one. The outbreak in the fall of 1908[2] was of particular interest, inasmuch as the infection was traced to a bacillus-carrier who was engaged in handling the milk on one of the farms from which the implicated supply was obtained. This woman gave a history of having had typhoid fever about eighteen years before and of having been since then in robust health.

Besides the cases which have occurred in the course of pronounced milk outbreaks we believe that there have been a number of scattering cases due to infected milk which we have not been able to trace, and we consider milk one of the major factors concerned in the transmission of typhoid fever in Washington.

Contact.—In the cases originating in the District of Columbia during the typhoid seasons of 1907 and 1908 about 20 per cent. of the patients gave a history of more or less direct or indirect association, during the thirty days previous to onset of illness, with previous patients in the febrile stage of the disease and were attributed to infection by contact.

Considering the large amount of association between persons living in a large city and the number of ways in which infection through personal contact may occur it is easy to understand that many cases in a large city may be due to infection by contact which can not be traced, and I regard personal contact as one of the major factors concerned in the transmission of typhoid fever infection in the District of Columbia.

Imported Cases.—About 24 per cent. of the cases of typhoid fever which were reported in the District of Columbia during the typhoid seasons of 1907 and 1908 were cases in which the infection had been contracted outside the District of Columbia. In the 1906 period the imported cases amounted to about 15 per cent. of the total.

Intricacy of the Washington Problem.—A number of interesting details as to seasonal prevalence, racial distribution, relation of the seasonal abundance of flies to the seasonal prevalence of the disease, etc., have been worked out, but they are set forth in the publications[3] and enough has been cited to indicate the great intricacy of the typhoid fever problem in Washington.

There is no mystery as to why Washington has some typhoid fever, but there does seem to be some mystery as to why Washington still has so much typhoid fever. For a city having the climatic and general sanitary conditions of Washington and having no water-borne infection a typhoid death rate of 35 per 100,000 per year does seem comparatively high.

The "excessive" typhoid rate in Washington presents an interesting field for speculation, such as (1) the possibility that the public water-supply, though not distributing typhoid bacilli, does convey some other agents which have to do with the establishment of susceptibility to typhoid infection; (2) the possibility of there being peculiarly active in Washington some as yet entirely unknown agent or agents which are concerned in the dissemination of the infection.

The fact that communities which have good water, a properly safeguarded milk-supply, a good sewerage system, and in which cases of the disease are properly cared for, have little or no typhoid fever indicates either that there are no unknown agents much concerned in the spread of the infection or that the same measures which prevent the operations of the known agents also prevent the operation of whatever unknown agents there may be.

In considering the "excessive" typhoid fever rate of Washington it should be borne in mind that climatically Washington is a southern city and that there are few, if any, cities of over 75,000 population south of Washington and east of the Mississippi river which during the two years 1907 and 1908 had typhoid fever rates as low as that of Washington.

AN OUTBREAK OF TYPHOID FEVER AT THE NATIONAL PARK SEMINARY, FOREST GLEN, MD.

In the latter part of March, 1909, an outbreak of typhoid fever occurred at the National Park Seminary, a school for young women located at Forest Glen, Md., a village about nine miles from Washington, D. C. Twenty-four cases developed.

2. Lumsden, L. L., and Woodward, William C.: A Milk-borne Outbreak of Typhoid Fever Traced to a Bacillus-Carrier, THE JOURNAL A. M. A., March 6, 1909, liii, 749.

3. Rosenau, M. J., Lumsden, L. L., and Kastle, J. H.: The Origin and Prevalence of Typhoid Fever in the District of Columbia, Rep. 1, Hyg. Lab. Bull. 35, U. S. P. H. and M.-H. S., Washington, 1907 [Season of 1906]; Rep. 2, Hyg. Lab. Bull. 44 [Season of 1907]; Rep. 3, Hyg. Lab. Bull. 51 [Season of 1908].

The first patient began to have slight prodromal symptoms about March 10 and developed definite symptoms and took to bed on March 19. The last patient began to complain about April 16 and developed definite symptoms and took to bed on April 21. The occurrence of cases by definite onset of symptoms was as follows:

	Cases		Cases
March 19	1	April 9	2
March 24	1	April 10	1
March 25	2	April 12	1
March 29	1	April 13	1
April 3	1	April 14	1
April 4	2	April 15	1
April 5	4	April 21	1
April 6	3		
April 8	1	Total	24

A fairly large proportion of the cases ran a mild course. Only one death occurred, making a fatality rate of 4.17 per cent. In the majority of the cases the diagnosis was confirmed by positive Widal test or by isolation of the typhoid bacillus from the blood, feces or urine.

Some of the students developed the disease at the seminary and others in different sections of the country to which they had gone for the Easter holidays.

Distribution of the Infection.—At the time of the occurrence of the outbreak the population of the seminary consisted of about 400 persons as follows:

Students	270
Officials and instructors	35
Employés and servants—	
White men	15
White women	35
Colored men	45
Total	400

The 24 cases were distributed among the seminary's population as follows: 20 in students, 1 in officials and instructors, and 3 in employés and servants. Thus the distribution of the disease among the three classes was quite general.

The grounds of the seminary cover about sixty acres. The buildings are all of modern construction and are kept in excellent sanitary condition. The four buildings occupied by the students are located in different parts of the grounds. The number of students to each building and the number of cases of typhoid fever which developed among them were as follows:

	No. of students.	No. of cases.
Main building	145	10
Villa	50	7
Junior building	35	3
Senior building	40	0

The three buildings occupied by employés and servants, with the number of occupants and cases to each, were as follows:

	No. of occupants.	No. of cases.
Building for white women	35	2
Building for white men	15	0
Building for colored men	45	1

Again, it was evident that the disease was generally distributed throughout the population regardless of building occupied as place of residence.

Previous Typhoid.—The seminary was established in 1894. No cases of typhoid fever developed among the persons living at the seminary until the beginning of the school term in the fall of 1908. Then two of the students developed definite symptoms of typhoid fever, one sixteen days and the other twenty-three days after arrival at the seminary. As no other cases occurred it was presumed that probably both of these students contracted the infection before coming to the seminary.

In the summer of 1908 three cases developed among the students about three weeks after they had left the seminary and gone for the summer vacation to their homes in different parts of the country. In these cases, also, the infection may have been contracted when the young women were *en route* to or after their arrival at their homes.

Place of Infection.—The first seven cases to occur in the outbreak were all among the students. As the students made trips to Washington about twice a month and on these trips usually took luncheon in the city, the first question to arise was if the infection had been contracted at the seminary or in Washington.

As a member of the typhoid fever board of the Public Health and Marine-Hospital Service engaged in the investigation of the disease in the District of Columbia, I was aware of the rate of prevalence of typhoid fever at that time in Washington and, as the rate among the students even then far exceeded the rate in Washington, and as reference to our case cards showed that there had been no disproportionately large number of cases among persons in Washington who had taken meals at the restaurants frequented by the students, there seemed at the beginning of the investigation little room for doubt that the infection had been contracted at the seminary. The subsequent extent of the outbreak proved the correctness of this impression.

Investigation of the Outbreak.—On March 30 the typhoid fever board of the U. S. Public Health and Marine-Hospital Service was requested by the authorities of the seminary to investigate the outbreak and to suggest corrective measures. This request was approved by the State Board of Health of Maryland, and on April 7 I visited the seminary and began the investigation.

On March 30, when first consulted in regard to the situation, however, I had advised that all milk supplied the institution be boiled or pasteurized previous to use and that the part of the water-supply obtained from a spring stream which, from its description, was considered liable to dangerous pollution, be discontinued unless this water could be boiled previous to use. The milk-supply was boiled on and after March 31; but some of the water from the spring stream was used until April 8.

At the time the investigation was begun the population of the seminary was about 150, about 230 students, and about 20 employés having left the seminary on or about April 3 and gone for the Easter holidays to various parts of the country. Seven cases of typhoid fever were then known to have developed between March 19 and April 6, five of the cases having been among the students who had remained at the seminary and two among those who had gone away.

Possible Sources of Infection.—After a careful inquiry the following possible sources of infection were found to have been common to the cases then known of:

1. Water-supply.
2. Milk-supply.
3. Bacillus-carriers among servants who prepared or handled foods.
4. Fruits and vegetables such as are eaten uncooked and other food-supplies.
5. Ice.

No raw shell-fish had been served at the seminary during the three months previous to the outbreak. So these could be definitely excluded.

Ice.—The ice had been obtained from one of the large factories in Washington and there had been no unusual number of cases among persons in Washington who used ice from that source. So the exclusion of ice as a factor was quite definite.

Food-Supplies.—The fruits and vegetables and other food-supplies had been bought from dealers in the large markets of Washington and Baltimore; and, as there was no unusual occurrence of typhoid fever among other customers of these dealers, the exclusion of the market supplies as a factor was quite definite.

Bacillus-Carriers.—The explosive character of the outbreak argued against a bacillus-carrier being the source of the infection. It was difficult to conceive how infection from a bacillus-carrier could have been disseminated so generally throughout the seminary's population in so short a time unless the bacillus-carrier was among those concerned in preparing or handling the food in the store-rooms or kitchen from which the meals for the whole population were served. Therefore, specimens of feces and urine from the sixteen servants engaged as cooks, store-room men, dish-washers or waiters were obtained and examined bacteriologically at the hygienic laboratory of the Public Health and Marine-Hospital Service. All the specimens were negative for the typhoid bacillus.

Milk-Supply.—The milk-supply during the four years previous to the outbreak had been received from a farm in the neighborhood. The farm is located on a high hill and is quite well isolated. No history of any illness on the farm to account for the infection was obtainable. Of the twelve persons at the farm none had ever had typhoid fever, all used the milk freely, and none had been sick. There had been no recent changes made among those who collected and handled the milk. The water-supply used for washing the milk-cans, etc., was obtained from a well located on the summit of a hill. A sample of water from the well was examined bacteriologically and found to be of good quality. Thus there seemed to be no reason for suspecting the milk-supply.

One of the cases developed 22 days after the milk-supply had been boiled; which fact, though by no means positively excluding the milk, yet is some evidence against it, as the incubation period in cases due to milk-borne infection usually is considerably less than 22 days.

Water-Supply.—The water-supply was obtained from two sources: (*a*) Three bored wells, each about 90 feet in depth, supplied most of the water used for drinking. The water from these wells was examined bacteriologically and found to be of good sanitary quality. (*b*) A small creek running through the seminary grounds supplied the water used for bathing, for washing dishes, and by the students and others frequently for brushing their teeth and sometimes for drinking. This creek had its source in a spring about half a mile above the intake for the seminary's supply.

The creek was found to be quite highly polluted with human excreta. Emptying directly into it about 100 yards below the spring was the sewage from a hospital in which there were thirty to forty persons. Besides this, some of the sewage from about fifteen residences located on the water shed of the creek between the spring and the seminary's intake evidently was washed or drained into the creek. The physician in charge of the hospital stated that there had been no case of suspected typhoid fever in the hospital. In one of the houses on the water shed, however, there had been a man ill with typhoid fever in February; his excreta, after treatment with copper sulphate—probably not sufficient to disinfect them thoroughly—were thrown out into the yard. This yard is on the crest of a hill which forms one shed of the creek. A roadway and a somewhat poorly defined gully run from the side of the yard down the hill to the creek, a distance of about 400 yards. It was evidently possible that some of the excreta from this patient could have been washed by the heavy rains and melting snows which occurred in the latter part of February and early part of March down the hill and into the creek.

Bacteriologic examination of the water from the creek showed it to be highly polluted, the colon bacillus being invariably demonstrated in quantities of 0.1 c.c. Specimens of the water collected on April 9 and on April 19 were examined by the method of Hoffman and Ficker[4] and by plating on Endo's medium for the presence of the typhoid bacillus. The results were negative. The failure to find the typhoid bacillus in the water was, of course, evidence neither for nor against the presence of such organisms in this water at the time the infection was distributed.

Measures Taken to Suppress the Outbreak.—All the evidence seemed to point to the water-supply obtained from the creek as the immediate source of the infection which had caused the outbreak. The infection in the water may have come from the discharges of the typhoid fever patient or of a bacillus-carrier on the water shed. The following recommendations were made with a view of eliminating the creek water as the primary source of the infection and also to prevent the spread of the infection from such secondary sources as had arisen or might arise:

1. Water.—To discontinue immediately the use of water from the suspected creek unless it could be surely and thoroughly boiled previous to use for any purpose. To make arrangements as rapidly as possible for permanently abandoning the creek as a source of water-supply and to pipe the water directly from the spring to the seminary. Before again using the tanks and pipes through which the creek water had been distributed, to scald them out thoroughly with boiling water.

2. Milk.—To pasteurize all milk used in the seminary.

3. Possible Typhoid Patients.—To isolate immediately all persons becoming ill with symptoms suggesting the possibility of typhoid fever, and to disinfect their excreta thoroughly.

4. Recovered Typhoid Patients.—To have bacteriologic examinations made of the stools and urine of the persons who had had typhoid fever to determine their freedom from infection before permitting the return of such persons from hospital or home to the seminary.

5. General Precautions.—To exercise special care in disposing of sewage and garbage; to flush out the sewerage system with a strong solution of crude carbolic acid; to protect the food-supplies from flies and other insects, etc.

6. To extend the Easter holidays until April 27, so that the improvements could be made before the majority of the students returned.

Result of Carrying Out Preventive Measures.—These recommendations were made on April 7, the day of my first visit to the seminary. They were concurred in by the Maryland State Board of Health and were carried

4. Hoffman, W., and Ficker, M.: Neue Methoden des Nachweiss von Typhusbacillen, Hyg. Rundschau, 1904, xiv, 1.

out by the seminary officials thoroughly and as rapidly as possible. The water from the creek was shut off on April 8 and the last patient to contract typhoid fever in the course of the outbreak developed definite symptoms on April 21, just thirteen days later.

A cement basin has been installed immediately below the springs, and into this the water is piped directly from the springs. Each of the springs is cement-walled. The water from the cement basin is conveyed by an iron pipe to the seminary, a distance of about half a mile.

The school term reopened on April 27 and all the students, with the exception of thirty or forty, returned to the seminary. Under the improved conditions all have remained well.

This outbreak strikingly illustrates (1) the comparative ease with which the problem of a local typhoid outbreak may be solved by careful epidemiologic studies, and (2) the readiness with which such an outbreak may be checked when the local authorities have, and exercise, the power to carry out the proper preventive measures.

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. DUTTON, STONE AND LUMSDEN

DR. W. H. WELCH, Baltimore: I should like to emphasize the importance of such prolonged, thorough, intensive investigations of the epidemiology of typhoid fever as those reported by the commission, of which Dr. Lumsden is a member, concerning the origin and prevalence of typhoid fever in the District of Columbia in 1906 and 1907. The report of the commission, consisting of Drs. Reed, Vaughan and Shakespeare, appointed to investigate the typhoid fever so appallingly prevalent in our camps during the Spanish-American War aroused attention to the importance of contact and of other sources of infection than the water in the spread of this disease, and the painstaking study of the typhoid fever of the city of Washington has still further emphasized the lesson that in the past we have often been too hasty in attributing the epidemic prevalence of typhoid exclusively to the drinking-water. The experience of Washington is particularly instructive, inasmuch as it was generally assumed before the introduction of central sand filtration in the latter part of 1905 that the Potomac River water was contaminated and was the source of the large amount of typhoid in that city. Despite an apparently admirable system of filtration, the amount of typhoid fever continued high during the summer months of 1906 and to a less extent of 1907. The evidence is strong, even if not absolutely convincing, that the drinking water at present plays no important part in the conveyance of typhoid fever in Washington, and the probability is that it never has been a significant factor there in propagating the disease, despite the almost universal professional opinion to the contrary in past years.

The experience in Washington is probably not exceptional, and it indicates the need of much more careful and detailed study of the conditions determining the occurrence of typhoid in American cities than has hitherto been customary. We should not make the drinking-water responsible for the disease without conclusive evidence. Of course, in many instances such evidence has been presented, and there seems no doubt that a large amount of the typhoid of Pittsburg, Philadelphia and some other cities is water-borne.

Although contaminated milk as a source of infection has long been known, the importance of this factor is not, I think, as yet sufficiently realized. Hitherto attention has been especially directed to explosive outbreaks occurring in the route of particular milk dealers, but there is evidence that the milk may be responsible for not a small percentage of the class of cases hitherto deemed explicable only on the assumption of a water-borne infection, that is, of the scattered and more or less uniformly distributed cases in a city, where the relation to the milk supply is not so immediately apparent. We need protection from the many and peculiar dangers of infection from the white streams of milk which course through our cities quite as much as from the risks of contaminated water. Recent investigations have brought to the front with ever-increasing force contact or the more or less direct conveyance of the typhoid bacillus from person to person as an important mode of propagation of this disease. It is certainly disturbing to learn that the human carriers and distributors of the bacillus are not merely patients in the febrile stage of the disease but are also those incubating the disease as well as persons during convalescence or after recovery, it may be even individuals in health without a history of a previous attack of the fever. It is apparent that the occurrence of multiple cases of typhoid in a household and the demonstration of contact with a typhoid patient afford no accurate measure of the extent of danger from contact, and that the determination of the rôle played by this factor in spreading the disease is often a matter of great difficulty and requires unusually patient and careful search. Under these circumstances it is significant that about 19 per cent. of the typhoid cases in Washington in the summer of 1907 were attributed to contact. In considering the manifold possibilities of conveyance of typhoid germs we should not lose sight of the fact that the primary source of the bacilli is always from human beings, and that every effort should be made to prevent the escape of living typhoid germs from this source into the various vehicles of contagion. In conclusion, I would urge the need for other cities of such painstaking studies by skilled investigators of the modes of conveyance of typhoid fever as those conducted during the past two years in the city of Washington, some of the results of which have been presented to us by Dr. Lumsden.

GENERAL GEORGE M. STERNBERG, U. S. Army: Dr. Lumsden did not refer to one condition in Washington which I think accounts for many of the unexplained cases. In Washington we have a very good water supply and a very good system of sewers, but the sewer system is not complete. We still have a large number of box privies in the alleys and in out-of-the-way places. We have a large colored population living in insanitary surroundings. Many of these colored people are scattered during the summer months at seaside resorts. Some of them no doubt after their return develop typhoid. I doubt whether Dr. Lumsden has been able to keep track of all of these important cases in the alleys of the city. We have a good health department but, unfortunately, not a sufficient number of inspectors. Some of the unexplained cases, I believe, are due to the carrying of infectious material by flies from the insanitary alley houses and out-houses often to the better houses which have sewer connections, and are located on streets and avenues, in the vicinity of the hidden alleys. The fly was not referred to by Dr. Lumsden but it was referred to by the first speaker. It seems that our sad experience during the Spanish-American War was necessary to convince the profession in this country of the rôle of the fly in the propagation of typhoid fever. I was convinced of this some years before the Spanish-American War, and in April, 1898, I issued a circular to medical officers of the army pointing out the dangers from insanitary camps, and especially calling attention to the danger of the transmission of typhoid fever by flies. The reader of the first paper seems to have made the discovery for himself. I think perhaps my official circulars were not read so extensively as they might have been, although most of our regular medical officers of experience were well informed on the subject, but when a lot of undisciplined troops are thrown into unprepared camps with insufficient medical officers, the result appears to be inevitable. Even when the chief surgeon is an officer of experience, he finds himself unable to cope with the situation. I fear that we might have the same result if undisciplined troops were again thrown into unprepared camps in preparation for an unexpected war. Now the remedy for this condition of affairs is proper training of volunteer troops, a thoroughly organized medical department, the prompt removal of febrile cases from the camp, and disposal of excreta by cremation whenever practicable. With a moving camp this may not be practicable, but with a moving camp there is less danger. This is one reason why the Japanese troops suffered little from camp diseases during the recent war with Russia. In the Spanish-American War our troops were assembled in camps where they expected to remain but a short time, but the majority of them were never called on to go to Cuba and remained in the camps, awaiting orders, until the camp site was

thoroughly infected. One of my recommendations made at the close of the Spanish-American War was that we should have permanent camps with sewers and a pure water supply, and everything necessary for the assembling of troops in case of emergency. So far as I know, this recommendation has not yet been acted on and I fear that if we had another war and a large number of troops were called out the lessons of the Spanish-American War might have to be relearned by the officers, both of the line and of the medical department.

DR. HENRY B. HEMENWAY, Evanston, Ill.: The greatest obstacle to progress in the control of typhoid has been the early recognition that sometimes typhoid was spread by water. It is familiarly called a water-borne disease. It has been impressed on me very emphatically, of late, that milk is far more liable to give the disease than is water. The typhoid germ, if I am not mistaken, does not thrive in water. In water it is a weakly germ, which cannot so readily multiply; but in milk it may multiply under exactly the same conditions, because it gets more nutriment. The great problem to-day seems to be the control of what is familiarly called the typhoid bacillus-carriers. That is a problem on more than one account. In the first place, a large number of these individuals are not suspected of being bacilli-carriers. There has been no systematic effort on the part of health departments to keep track of every typhoid case until it is known that the patient no longer excretes the typhoid germ. I can recognize the fact that it would be a hardship on the community, and especially upon the individual, if every typhoid patient were kept, as we might say, in quarantine, using that word even in a very broad sense; but it seems to me that certain laws should be passed which would give a supervision of all bacilli-carriers. Diphtheria presents a similar problem. I had an instance within the last six months; the bacillus-carrier, a woman perfectly well and strong, absolutely objected to being restricted. She happened to be a diphtheria carrier. A number of cases of diphtheria were shown in a certain territory occasionally cropping out; and the thing was to find where the infection came from. Finally, it incidentally came to the knowledge of some that there was a particular fruit peddler going through that territory who himself was well but had had a case in his family which was suspiciously like diphtheria. The typhoid carrier is particularly dangerous whenever he comes in contact with any food which others will eat without further cooking. The typhoid carrier should by law be restricted from any employment on milk farms; he should be restricted from employment in a bakery, or in a grocery, or in any such place.

DR. JUAN GUITERAS, Havana, Cuba: I have had no special experience with typhoid fever from the point of view of the public health officer. We have little typhoid fever in Havana. Our water supply is excellent, coming direct from abundant springs. The milk used in Cuba is always boiled. No raw milk is ever drunk in Cuba. Perhaps for those two reasons typhoid fever is limited there. The tracing of contact relations in the few cases that we do have in Havana is usually not difficult.

DR. A. C. ABBOTT, Philadelphia: Coming from a community in which the average incidences of typhoid fever has been for years approximately 6,000 cases annually, it is not unlikely that some at least of our experiences may prove to be of service. In the beginning, I should like to subscribe to that which has already beeen said by Dr. Welch concerning the instructive work of the Washington board of which Dr. Lumsden is an active member. It has brought out in an impressive manner the complicated nature of the problem of typhoid fever as it effects a community, and has left no doubt in the minds of those familiar with it that no stone should be left unturned in seeking for the causes of endemicity of typhoid fever. It also demonstrates that conclusions drawn for one community may not of necessity be applicable to others. You have heard what has been said concerning Washington. In Philadelphia there is no reasonable room for doubt that our principal trouble lay in the filthy, grossly polluted drinking-water with which our city until very recently was supplied. With the introduction of proper methods of purifying that water, the occurrence of typhoid fever immediately lessened by about 80 per cent., and we believe that with the continuance of the purifying methods and the further extension of the system that this reduction will be still greater reduced. There is no doubt that many cases in the city arise from the use of specifically infected milk, but I would hesitate to form an estimate of the proportion of these cases, for it would be nothing more nor less than guess work. On several occasions we have, it is true, succeeded in tracing to their origins some isolated outbreaks of the fever due to contaminated milk. Two of these are so instructive and worked out with such mathematical percision that I am tempted to relate their main points:

One outbreak occurred in one of the lower wards of the city and involved over fifty persons. Without entering into the details, it will suffice to say that on investigation the milk purchased by these individuals was found to have come from a farm on which about three or four weeks prior to the outbreak there had been in a family of seven, five cases of typhoid fever, the two remaining members, the wife and a little daughter, having charge not only of the patients but likewise preparing the milk for market. The bedpans used by the patients were washed on the back porch immediately over the spring used for rinsing the milk cans. The next outbreak involved a number of students at one of the colleges in Philadelphia. In this instance we found the milk being supplied to have been produced on a farm where inspection showed everything to be in a satisfactory condition. It was, however, handled by a middleman and in looking into affairs at his place we found that the milk was being bottled from the cans by means of a rubber syphon. His two sons sucked the milk up from the can with an ordinary piece of rubber tubing and allowed it to flow into the bottle. One of these sons within a day or two was taken to the hospital ill with typhoid fever, and in less than a week the second was also sent to the hospital with the same disease. That experiences of this kind are to be had in every community I have no doubt.

With the contact cases we have a much more difficult problem. Of course, the obvious contacts we exclude from our consideration but that there is a subtle dissemination of the disease through ways of contact not obvious I have no doubt whatever.

A great difficulty in satisfactorily tracing out completely the dissemination of this disease lies in the almost impossibility of securing uniformly correct histories. It is astonishing how few apparently intelligent people can answer no questions in such a way as to aid you. Many do not seem to have the least recollection of where they have been or what they have done during the incubation period of the disease. Others make statements that are intentionally misleading, I am sure.

Another difficulty that is common to most communties is incorrect diagnosis. We have repeatedly had reports come to our office of persons having typhoid fever at such and such an address. Often in less than a week from the onset of the disease these persons are attending to their ordinary avocations.

Until there is some concerted action concerning the control of water courses the municipal problem of typhoid fever is going to be very largely a water problem.

It is needless for me to mention the variety of other ways in which the disease may be disseminated, such as by insects, by vegetables grown in land fertilized with human manure, by shell-fish taken from polluted waters, etc.

DR. LISTON H. MONTGOMERY, Chicago: Perhaps raw oysters and other shell-fish have something to do with the dissemination of typhoid fever in the cities on the coast. In Chicago the people cannot all afford these luxuries. It is well known that the dissemination of typhoid is due to the house-fly and the fruit, or pomace, fly, roaches, etc. Weeks ago our Commissioner of Health issued a bulletin instructing housewives on the necessity of placing in windows wire screens, so as to prevent flies from entering the house and contaminating the food. In some of the cities, as I understand it, active war has already been begun for the extermination of the house-fly. Bacteriologists who have captured flies in the houses stained these insects, as I understand it, with a brilliant dye and released them, watching the flies afterward by following them and seeing that they reveled in filth boxes, garbage, etc. Later these same flies returned to the houses where they were previously captured and stained; then, before they had time to contaminate food, they were recaptured and their excreta, or

contents of their alimentary tract, were investigated and were found to contain the bacteria, not only of typhoid, but of various other diseases.

In one of the larger towns in the East a householder, having recovered from typhoid fever proved to have been contracted, I understand, on account of the polluted stream that went through the town, instituted a lawsuit against the town and, I believe, recovered damages by judgment.

DR. SENECA EGBERT, Philadelphia: One other source of infection has not been mentioned to-day, and I am rather surprised thereat. It is not a proved source, but it seems to me a very possible one. I refer to celery, lettuce and other articles of food which come to us in the fresh, green state. I have in mind three instances which seemed to me to help make that a possibility. One case was that of the small child of one of my colleagues, in whose home I can vouch for extraordinary care as to typhoid infection. The little girl had a serious case of typhoid; and in the minds of her parents the only thing that could have caused it was celery, of which she was very fond and which they used very largely in the household.

Some years ago members of one of the improvement associations in the northern part of Philadelphia came to me and asked my opinion as to the use of night-soil from old privy vaults on the truck farms in their neighborhood. They declared it a common practice of these farmers to use night soil on these farms. I saw an Italian picking watercress from a little stream which was close to the ends of the ties of the railroad track and which could readily have been polluted and infected by a typhoid carrier on a passenger train. So it seems to me entirely possible that a number of cases may occur in this way through infection from such articles of food as are consumed in the fresh, green state and which cannot, so far as I know, be sterilized and made free of the germ, once they are contaminated.

I am glad to testify that Dr. Abbott has been one of the factors in Philadelphia which have brought about that elimination of a large proportion of our typhoid cases and which we are very glad to have eliminated. The sources of the others may continue to puzzle us for some time to come, but must eventually be discovered and eliminated.

This problem is a very complex one, demanding the attention of every sanitarian. For a long time I have felt that it is just as important a problem as tuberculosis; while the incidence and the death rate from typhoid may not be so high as in the case of tuberculosis, I think a crusade against the former carried on with the same vigor and the same widespread effort the country over as that against the latter would result in a much greater diminution in death rate and incidence than the tuberculosis crusade can possibly hope to achieve in anything like the near future.

DR. J. N. HURTY, Indianapolis: Other theoretical sources, and we now think practical sources, of typhoid fever, are public lunch wagons, public fruit stands and candy wagons. My attention was directed to this by a newspaper man. A reporter was taken ill with typhoid fever; and the man who made his rounds, afterward talking on the subject to me, said: "I don't know where he could have gotten it; unless from one of those lunch wagons." Then a policeman who frequently patronized the same lunch wagon was attacked with typhoid. Investigation showed that the lunch man had typhoid in his family; so, of course, there was the source, and it is comparable to the restaurant source.

In regard to the spread of typhoid fever by contact: The Indiana Soldiers' Home at Lafayettte is beautifully situated. The sanitation is very good. There was no typhoid there—had not been for years. The commandant's son came home with typhoid from school. The chief physician of the institution attended him, and presently the disease spread all over the institution. There were 65 cases and 1 death. After a thorough investigation showing the deep well-water to be pure, the sewage perfect, and all that, we found that the physician spread the infection all through that institution. He came down with it himself and was very ill—so ill that he was delirious while the investigation was being made. We asked him what precautions he took after he handled the patient; what precautions he took in regard to washing his hands, and he said he did not take any. "Did you wash your hands?" "Well, sometimes I did and sometimes I did not." In this instance 65 patients were infected by the physician himself; not all of them, of course, but he started the infection. So a physician may be a distributing agent.

DR. HENRY B. HEMENWAY, Evanston, Ill.: I have long been accustomed to use a little coverette on my thermometer, so that the thermometer never touches the patient. It seems to me that is a precaution that might well be used in such cases.

DR. A. W. FREEMAN, Richmond, Va.: We have had in Richmond, and later in Virginia at large, an interesting experience with typhoid. The Richmond investigation was begun independently of the Washington work, and the results were in perfect accord with those arrived at in Washington. The parallelism between the typhoid rates of the two cities, as has been pointed out elsewhere, is remarkable. We were able, also, to account for about the same percentage of cases, leaving the larger number of cases without explanation. In July, 1908, the newly reorganized state department of health began a similar investigation of the small, local outbreaks in Virginia, believing that these, offering less complicated situations than the outbreaks prevailing in the larger cities, would throw more light on the problem. The results of this investigation were varied. Of about thirty outbreaks investigated a few were apparently caused by water, but by far the larger number of cases in the smaller towns could be traced to the carrying of the infection from house to house by food, or by the visits of neighbors entering the sick-room. Even the most casual contact might, apparently, be responsible for the spread of the disease.

This year we hope to investigate the true rural typhoid; typhoid on the farm, where the whole process of spread can be seen plainly. On the average Virginia farm you can follow the movements of every member of the family for weeks and even months prior to the outbreak, and we have already followed out a number of these cases, where the disease could be traced from farm to farm, over long distances. We believe that this type of the disease offers a particularly inviting field for investigation. We believe strongly in the contact idea as applied to typhoid in Virginia. We have no opinions to offer as to typhoid in any other locality, but so far as our present experience goes we do not believe the farm well to be responsible for any great number of cases. It is the contact of the well person with the patient that results in the spread of the disease in Virginia.

DR. F. F. RUSSELL, U. S. Army: There is another way to prevent typhoid fever besides tracing down the source of infection and destroying that source, and that is, by vaccination, or inoculation or immunization of a body of men. While this is not a practicable matter for civil life within any large limits, it is within the military service, and the surgeon-general of the army has now started to immunize large bodies of troops against typhoid. The British and German campaigns against typhoid fever (which are conducted as our own, with the idea of preventing infection from every possible source and without neglecting any other means which will help us in stamping out typhoid) have shown that vaccination against typhoid undoubtedly does protect and that it protects for a considerable length of time. The figures of the British (which have recently been published and which have been mentioned by Dr. Stone) show very roughly that among those men who have been vaccinated there is only one case of typhoid to every ten cases among men equally exposed who have not been vaccinated. Now that result is sufficient to encourage us in the use of vaccination among all persons who are to be exposed to typhoid. Going into a camp is equivalent to going into an endemic area, for typhoid prevails everywhere in the United States; and we cannot organize a camp or assemble any large number of men without having typhoid introduced inside of three weeks. The disease will spread by contact, almost altogether by contact, and contact in a camp is much more intimate than in civil life, so that the dangers which are present everywhere are present in a much greater degree in camp. We feel that not only must we provide pure water and pure food, and destroy the excreta, etc., of everyone, but we must also vaccinate everyone who can be persuaded to take it as an additional means of reducing the morbidity and mortality from this disease.

DR. JAMES B. BULLITT, University, Miss.: In my town (population 2,500), cisterns, shallow wells and privies were in use until about ten years ago. On the installation of a sewerage system and of a water supply from artesian wells, typhoid, which had been fearfully prevalent, practically disappeared. There is one block, however, occupied for the most part by the better class of people, where the configuration of the ground prevented junction with the main sewers. A short sewer was therefore laid emptying into a little ravine only a few rods away. The water supply is the same as for the rest of the town. Here several cases of typhoid have occurred every year, though the rest of the town has remained practically free. As there have been several intervals of eight or ten months between consecutive cases, it seems unlikely that each crop has developed from those immediately preceding. It is my opinion that some bacillus-carrier, whom we have been unable to identify, lives on that street and intermittently infects the ravine, from which doubtless flies and other insects carry the infection to the neighboring houses.

DR. GARDNER T. SWARTZ, Providence, R. I.: In Providence, when an epidemic breaks out in a quarter, the health officer is called on to put his finger on the source; if he cannot he is not a master and cannot hold his position. The public is now becoming informed of these matters and the possibilities that we have of determining the various sources of this disease. We must encourage our departments, both state and national, in the promulgation of this investigation work, and urge that the laboratories must be so situated, and of such convenient distances, that we shall be able to utilize them for carrying out the study of this disease, concerning which on many occasions we must acknowledge our impotence.

DR. MARTIN FRIEDRICH, Cleveland, Ohio: These discoveries of new carriers of typhoid fever germs are not only interesting but of great importance but let us remember that in the main typhoid fever is a water-borne disease.

DR. H. M. BRACKEN, St. Paul, Minn.: We had a beautiful opportunity to study typhoid in Minnesota in a little town where we told them they were going to have it; and we got the first case. A short time ago my attention was directed to a farm where the residents were man and wife, and where every employee for the last seven or eight years who has come onto that farm has had typhoid fever. I asked if either of the members of the family had had the disease and I was told by the physician no; but when we sent someone to find out, we found that the wife had had typhoid several years ago.

DR. W. FOREST DUTTON, Walkers Mills, Pa.: When I prepared this paper I expected critical discussion, and earnestly desired it, for my own personal edification more than anything else. The technic was not different from that used by bacteriologists. Precautions were taken to eliminate other than the *Bacillus typhosus* of Eberth. When I say typhoid, I mean, distinctly and absolutely, the bacillus of Eberth and not paratyphoid, colon, or the paracolon bacillus nor intermediate species. I used culture media most suitable to the individual case. It is truly a difficult task requiring ofttimes months to secure positive results. It has been known for years that typhoid bacilli reach the blood through other than ordinary channels. In the first two weeks of typhoid there is a marked blood infection; the bacilli occur in the tissues in clumps, and the roseolæ contain bacilli. Bacilli are frequently found in urine, feces, bile, and pus, years after primary infection. Thence, it can easily be inferred how the infection is accessible to the insects referred to in my paper. The proofs that have been furnished by Grünbaum and Sanarelli prove the specific character of typhoid.

In reference to typhoid commissions, I would say that a great deal has been accomplished by their efforts, yet salient etiologic factors are frequently overlooked. A general survey is made of epidemic and endemic outbreaks of typhoid, and general data are accumulated. The fact remains, however, that a commission cannot study individual cases as affecting rural districts, and this, perhaps, accounts for failure to learn the source of infection.

In closing, I should like to say that vaccination against typhoid will, when the method is perfected, prove one of the greatest boons to the human race, second only to vaccination against smallpox.

DR. L. L. LUMSDEN, Washington, D. C.: It is a great pleasure to see such a keen interest taken in the typhoid problem. The many valuable suggestions made in the course of the discussion I am sure will aid us in our future work in Washington. At the beginning of our studies in Washington we suspected that there might be many cases of typhoid which were not reported and which might constitute some of the undiscovered links in the chain of transmission of the infection by contact. In the summer of 1908 we conducted a house-to-house canvass in 32 city blocks having a population of about 6,000. The results of this canvass incline us to believe that in Washington more cases of typhoid are reported than exist in a clinical sense.

As Dr. Welch remarked, I probably did not sufficiently emphasize the milk problem. The pronounced milk outbreaks in Washington may be regarded somewhat as acute exacerbations of a chronic affection. A number of scattering cases doubtless are due to milk-borne infection which cannot be traced. In our reports charts are presented which show the occurrence of typhoid cases among customers of different dairymen proportionate to amount of milk sold. One dairyman who sterilizes bottles and cans and pasteurizes milk has had among his customers a consistently low typhoid rate. This is significant and perhaps indicates what would be the result of the pasteurization of Washington's general milk supply.

There are now in the District of Columbia only about 3,000 privies. We expect to find a higher rate of prevalence of typhoid in the sections largely provided with privies; but we were disappointed and we have not been able to say as harsh things about privies as we had hoped. It is true that there are in Washington insanitary alleys having a crowded negro population, but we have found that the prevalence of typhoid in these alleys is no greater than in the better sections of the city. We have given considerable attention to flies. No preponderance of cases has been found among persons living in unscreened houses and among those whose occupations exposed them unduly to flies. Last summer Dr. L. O. Howard, at our request, made a study to determine the seasonal abundance of flies in Washington. The lack of parallelism between the curve showing the seasonal abundance of flies and that showing the seasonal prevalence of typhoid opposes the view that flies are a major factor in the transmission of typhoid infection in Washington.

It is encouraging to hear from Dr. Guiteras that there is very little typhoid in Havana. Havana is distinctly a tropical city, having the year round about the same climate that Washington has during the summer. Washington's typhoid season. It seems that, regardless of climate, localities having good water, good milk, good sewage disposal and in which typhoid patients are properly cared for have as a rule little or no typhoid.

Publicity in Tuberculosis.—Publicity through the press is being utilized with good effect in the fight against tuberculosis by the Board of Health of Salem, Mass. A series of articles has been prepared for insertion in the newspapers which aim to give information that will be of benefit to the people in general. The objects of the articles are to show the great frequency of tuberculosis and the importance of infection, bad habits and insanitary surroundings as compared with heredity, to arouse public officials to a sense of duty, to instruct the well as much as the sick, and paint the consumptive's future as bright as possible, avoiding extreme opinions and interference with the proper field of the physician. The articles are supplemented by a skillfully managed question box in which many of the popular fallacies regarding the disease and plausible objections to the statements made in the articles are corrected and refuted. The method of the Salem board is worthy of the attention of other health authorities and has received the commendation of a considerable number. Such articles must be carefully managed to avoid exciting undue alarm, but the hope of cure held out to sufferers from the disease and the sensible stand taken in these articles as to danger from contagion is likely to avoid such a result.

A CONVENIENT METHOD FOR DETERMINING CALORIC VALUES OF FORMULAS BASED ON PERCENTAGE FEEDING OF INFANTS *

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At present there are two schools in the pediatric world more or less opposed to each other on the subject of infant feeding. The German school almost universally supports the caloric, while the American school largely upholds the percentage system. It is apparent to all that each school must have its good points when supported by such representative men as Heubner, Camerer, Rotch, and Holt.

While one pediatrician using the percentage system of feeding occasionally calculates the caloric value of what he prescribes—not a rare procedure — another man can be seen following the German idea, who calculates regularly the calories considered essential, but seldom, if ever, knows what kind of percentage strength of food he is giving. Both schools support their side of the question stoutly and each seems to me rather slow to see any good in the other. If these can be combined, the good of each will strengthen the value of the other. Heubner, Camerer and others of their school have said that they have successfully fed children by using simple dilutions of milk, letting the caloric value of the food not exceed from 100 to 120 calories per kilogram per body weight and gradually reducing this to 80 calories at the end of the first year. Granting that Heubner's caloric value of milks, diluted to suit the digestion, is correct and is important for successful feeding, why is it not important also from a scientific as well as a practical point of view to have these same dilutions calculated in percentages of fat, sugar and proteid?

Percentages of fat, carbohydrates, proteids, water, solids, etc., to a certain extent, are, we know, taken into consideration when feeding delicate digestions among adults. Why is it, then, not far more important to consider the same things when using food in the feeding of infants? We hear from Czerny, Camerer, Salge, Holt, and others that fats are not easily borne by the child and are frequently seen to be the cause of acute and chronic indigestion. If this is true, and I am fairly convinced of the fact, a knowledge of the percentages of ingredients in the milk formulas, etc., will be of great practical value.

I shall not enter into the much discussed fields of the digestibility of fats, sugars and proteids for infants, or their management in home modification or laboratory prescriptions. I merely wish to urge a more constant trial of the use of the two systems, using them in the proper relation one to the other. The percentage system, no matter how calculated, prevents, if properly used, the over-feeding of fat, and holds one within the conservative limits of sugar and proteid, while the caloric value of these same percentages prevents one from overcharging the intestine and putting too much work on the digestion of the infant.

My object in writing this paper is, first, to urge a more thorough trial of these combined methods, and, second, to offer to the medical profession a plan, other than the ordinary, as a possible aid in computing the calories of any formula of infant feeding based on the percentage system.

This plan depends on a table of caloric values for the different percentages of fat, sugar and proteid used in infant feeding. These values are calculated for each gradual increase of strength in percentage, and of the quantity of food. These same values are placed side by

TABLE OF CALORIC VALUES USED IN INFANT FEEDING

(Values are estimated according to percentage strength of constituent and the amount of food.)

Am't.of Food in Ounces.	Per-centages.-(%)			1.			2.			3.	
Am't.of Food in Cubic Cent.		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
FATS-	4.00	0.3720	0.7440	1.1160	1.4880	1.8600	2.2320	2.6040	2.9760	3.3480	3.7200
	.75	0.3487	0.6975	1.0462	1.3950	1.7437	2.0925	2.4412	2.7900	3.1387	3.4875
	.50	0.3255	0.6510	0.9765	1.3020	1.6275	1.9530	2.2785	2.6040	2.9295	3.2550
	.25	0.3022	0.6045	0.9067	1.2090	1.5112	1.8135	2.1157	2.4180	2.7202	3.0225
	3.00	0.2790	0.5580	0.8370	1.1160	1.3950	1.6740	1.9530	2.2320	2.5110	2.7900
	.75	0.2557	0.5115	0.7672	1.0230	1.2787	1.5345	1.7902	2.0460	2.3017	2.5575
	.50	0.2325	0.4650	0.6975	0.9300	1.1625	1.3950	1.6275	1.8600	2.0925	2.3250
	.25	0.2092	0.4185	0.6277	0.8370	1.0462	1.2555	1.4647	1.6740	1.8832	2.0925
	2.00	0.1860	0.3720	0.5580	0.7440	0.9300	1.1160	1.3020	1.4880	1.6740	1.8600
	.75	0.1627	0.3255	0.4882	0.6510	0.8137	0.9765	1.1392	1.3020	1.4647	1.6275
	.50	0.1395	0.2790	0.4185	0.5580	0.6975	0.8370	0.9765	1.1160	1.2555	1.3950
	.25	0.1162	0.2325	0.3487	0.4650	0.5812	0.6975	0.8137	0.9300	1.0462	1 1625
	1.00	0.0930	0.1860	0.2790	0.3720	0.4650	0.5580	0.6510	0.7440	0.8370	0.9300
	.75	0.0697	0.1395	0.2092	0.2790	0.3487	0.4185	0.4882	0.5580	0.6277	0.6975
	.50	0.0465	0.0930	0.1395	0.1860	0.2325	0.2790	0.3255	0.3720	0.4185	0.4650
	.25	0.0232	0.0465	0.0697	0.0930	0.1162	0.1395	0.1627	0.1860	0.2092	0.2325
SUGARS-	7.00	0.2870	0.5740	0.8610	1.1480	1.4350	1.7220	2.0090	2.2960	2.5830	2.8700
	.50	0.2665	0.5330	0.7995	1.0660	1.3325	1.5990	1.8655	2.1320	2.3985	2.6650
	6.00	0.2460	0.4920	0.7380	0.9840	1.2300	1.4750	1.7220	1.9680	2.2140	2.4600
	.50	0.2255	0.4510	0.6765	0.9020	1.1275	1.3530	1.5785	1.8040	2.0295	2.2550
	5.00	0.2050	0.4100	0.6150	0.8200	1.0250	1.2300	1.4350	1.6400	1.8450	2.0500
	.50	0.1845	0.3690	0.5535	0.7380	0.9225	1.1070	1.2915	1.4760	1.6605	1.8450
	4.00	0.1640	0.3280	0.4920	0.6560	0.8200	0.9840	1.1480	1.3120	1.4760	1.6400
	.50	0.1435	0.2870	0.4305	0.5740	0.7175	0.8610	1.0045	1.1480	1.2915	1.4350
	3.00	0.1230	0.2460	0.3690	0.4920	0.6150	0.7380	0.8610	0.9840	1.1070	1.2300
	.75	0.1127	0.2255	0.3382	0.4510	0.5637	0.6765	0.7892	0.9020	1.0147	1.1275
	.50	0.1025	0.2050	0.3075	0.4100	0.5125	0.6150	0.7175	0.8200	0.9225	0.0250
	.25	0.0922	0.1845	0.2767	0.3690	0.4612	0.5535	0.6457	0.7380	0.8302	0.9225
PROTEIDS-	2.00	0.0820	0.1640	0.2460	0.3280	0.4100	0.4920	0.5740	0.6560	0.7380	0.8200
	.75	0.0717	0.1435	0.2152	0.2870	0.3587	0.4305	0.5022	0.5740	0.6457	0.7175
	.50	0.0615	0.1230	0.1845	0.2460	0.3075	0.3690	0.4305	0.4920	0.5535	0.6150
	.25	0.0512	0.1025	0.1537	0.2050	0.2562	0.3075	0.3587	0.4100	0.4612	0.5125
	1.00	0.0410	0.0820	0.1230	0.1640	0.2050	0.2460	0.2870	0.3280	0.3690	0.4100
	.75	0.0307	0.0615	0.0922	0.1230	0.1537	0.1845	0.2152	0.2460	0.2767	0.3075
	.50	0.0205	0.0410	0.0615	0.0820	0.1025	0.1230	0.1435	0.1640	0.1845	0.2050
	.25	0.0102	0.0205	0.0307	0.0410	0.0512	0.0615	0.0717	0.0820	0.0922	0.1025

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

side in columns and rows, so that the columns represent values of different percentage ingredients of the same quantity, while the rows represent the same per cent. strength of ingredient of different quantities. (For the former read up and down, for the latter read horizontally.) The fats differing in caloric value from the sugars or proteids (9.3 Cal. to 4.1 Cal.) are worked out by themselves. The sugars and proteids of similar energy power (4.1 Cal.) are estimated together.

The increase is 0.25 per cent., as is shown in the left-hand column. This is used throughout the table for fats, sugars and proteids, it being practically about the smallest and at the same time the most exact per cent. possible to be used in home modification and laboratory formulas. In the combined sugar and proteid values the strength will be seen to increase above 4 per cent. by 0.5. The limits of percentage for fat, sugar and proteid are taken from the general reading and practice of American and foreign pediatrists. The fats are estimated from 0.25 to 4 per cent., the 0.25 per cent. representing the lowest practical strength, while the 4 per cent. represents the usual strength in "whole milk" of Holstein and Ayrshire cattle, which is further generally agreed to be the safety point above which tolerance and indigestion, due to fats, seem to appear most often. The upper limit of sugar and proteid is that which is generally accepted as essential for ordinary use, that is, 7 per cent. in sugars and 3.5 per cent. for proteids.

The increase in quantity is shown in the two top rows of the table. Here, reading from left to right in the second row, are shown the gradual quantitative increase of food constituents from 1 to 10 cubic centimeters. The decimal system, although not much used in this country, is rapidly advancing. It has seemed to me the most natural and the easiest one to use when dealing with percentages. By merely changing the point to the right one, two or three places in any column the value of ten, one hundred and one thousand times the amount of the ingredient can be instantly seen (i. e., take "3 c.c." column; by moving the point one place, we have the value of 30 c.c., two places, the value of 300 c.c., and with three places, the value of 3,000 c.c.). For those who wish to calculate in ounces, the top row of figures has been added. Here we rely on the fact that one ounce practically equals 30 cubic centimeters, two ounces 60 cubic centimeters, and three ounces 90 cubic centimeters. With this knowledge, the values of one, two and three ounces can be estimated by following down the "3, 6 and 9 c.c." columns and changing the decimal point one place. For 10, 20 and 30 ounces merely change the point two places.

The method for computing the table is simple. The energy values for one cubic centimeter of 0.25 per cent. of fat, sugar and proteid are calculated. The resulting figures are used as factors or bases, whence by mere addition or multiplication all other values are easily worked out. One gram of fat possesses 9.3 calories of energy, and is practically equivalent to one cubic centimeter of fat; then one cubic centimeter of fat has 9.3 calories of energy. For example, if one cubic centimeter of 0.25 per cent. fat has 0.02325 calories, then 2 cubic centimeters will have just twice that amount, or 0.04650 calories; and, again, if one cubic centimeter of 0.25 per cent. fat has 0.2325 calories, then one cubic centimter of 0.50 per cent. fat will have twice the number of calories as are in one cubic centimeter of 0.25 per cent.

THE METHOD OF USE

When using percentages in feeding, the caloric value is ordinarily calculated by multiplication of the percentage of fat, sugar or proteid by the respective value of one gram of each ingredient, and then by the total amount of food in the twenty-four hours. To complete this problem, these three values must be added together to procure the actual daily energy of the food. For example:

Formula: Fat, 3 per cent.; sugar, 6 per cent.; proteid, 1 per cent. Total amount, 300 c.c.

Three hundred cubic centimeters of 3 per cent. fat, 300 x .03 (3%) x 9.3 cal. (energy value of 1 c.c. fat) gives 83.7 calories.

Three hundred cubic centimeters of 6 per cent. sugar, 300 x .06 (6%) x 4.1 calories (energy value of 1 c.c. sugar) gives 73.8 calories.

Three hundred cubic centimeters, of 1 per cent. proteid, 300 x .01 (1%) x 4.1 calories (energy value of 1 c.c. proteid) gives 12.3 calories.

Total, 169.8 calories.

This requires two multiplications in each ingredient, or a total of six. By referring to the table it is seen that by knowing the percentage of fat, sugar and proteid in the food, as well as the total amount, these same values are quickly found and the multiplications are done away with. The addition in both methods is and always will be necessary.

Read down the respective percentage column until the desired percentage is found, follow this row until the amount is reached, then read. Add these values and the total caloric value of the food results.

Formula: Fat, 3 per cent.; sugar, 6 per cent.; proteid, 1 per cent. Total amount, 300 c.c.

Look down the percentage column until 3 per cent. is reached, read now to the right until "3 c.c." column is seen, as the total amount is 300 c.c.; move the decimal point two places, and we have 83.7 calories for 300 c.c. of 3 per cent. fat. This same process is done in the percentage columns of sugar and proteid and we quickly find the calories of sugar to be 73.8 and those of proteid to be 12.3.

Variations in the above example appear when the total amount becomes an uneven quantity, 330 cubic centimeters, or 440 cubic centimeters. Here the problem is slightly increased. We find the value for 300 cubic centimeters, and for 30 cubic centimeters, by merely changing the decimal point; the addition of these two gives the total. When the total quantity is in ounces, we use the ounce columns and proceed as if using cubic centimeters, changing the point as occasion demands, and when necessary multiples of the same (i. e., for 6 ounces, twice the value of 3 ounces, for 4 twice that for 2 ounces, etc.).

All tables and formulas in infant feeding only add trouble to this already most complicated subject, unless they fulfill certain requirements. The method of formation must be clearly understood and the method of using the same, while both must be simple. Unless such tests can be applied to any such scheme, difficulty arises, and the table or formula is worse than useless. I have attempted to show as shortly and as concisely as possible how this plan was worked out and is used. It is simple, I think, to understand and to use; therefore, I hope that it may be of some service to the profession and possibly aid in the fusion of the two theories of the foreign and American schools.

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Tracheotomy in Cancer of Larynx.—Tracheotomy cannot be considered as a curative operation. It serves only to relieve the stenosis of the larynx caused by the cancer, or comes into play as a preliminary to the radical external operation.—O. Chiari, in *Annals of Otology, Rhinology and Laryngology.*

HEUBNER'S SYSTEM OF INFANT FEEDING EXPRESSED IN CALORIES AND ENERGY UNITS*

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No food, no growth.

After the fourth week of life in a qualitative, and after the sixth week in a quantitative manner, a certain normal feeding has been established for the child which allows of an average estimation in quantity and quality of food taken. The single and daily feedings of the infant will closely approximate the averages fixed.

After the sixth week the child requires from 600 to 900 (from 20 to 30 oz.) grammes daily and after the fourth month from 1,000 to 1,100 grammes (33 to 36 oz.); these amounts are seldom exceeded. These figures have been established by weighing a large number of children daily for months and represent average values. According to the observations of Dr. Feer the amount of food taken daily by one individual infant varies greatly; in this the child resembles an adult. These daily variations in feeding of infants must be remembered when we take up artificial feedings. The number of daily feedings in the cases observed and controlled were not frequent. The first three or four weeks of life the infant was fed every two hours; after this from six to seven times daily. After the fourth month six daily feedings were given, and in many cases only five.

The quantity taken at each meal varies from 50 to 200 (1⅔ to 6½ oz.) grammes. The time taken for a meal varies in individual cases from fifteen minutes to one-half hour. After the third week there is very little variation in the chemical quality of the mother's milk. The constituents are not so fixed as in a mineral water; fat varies greatly at the different feedings. Frequent examinations of milk obtained in sufficient quantity of the same breast, repeated for days, will show a surprising sameness. Further, the examination of milk from many different mothers also agrees so nearly that an average has been established.

In 100 grammes (3 oz.) of mother's milk the infant gets according to the form established:

Proteids.	Fats.	Sugar.	Salts.	Unknown organic substance.
(13½-15 grs.)	(50-60 grs.)	(90-105 grs.)	(2.85 grs.)	(6 grs.)
0.9-1.0%	3.5-4.0%	6.7-7.0%	0.19%	0.6%

When the milk reaches the stomach it is rapidly changed. The casein is precipitated, but, as there is but little casein in mother's milk, the precipitation is fine and flocculent.

Casein and salts remove the acid of stomach secretions and it requires from 1 to 1½ hours before it reappears. According to von Mehring, whenever the intestines are filled up, no more food is allowed to escape the stomach, and thus the bowels are guarded against overflow and overwork.

All foods entering the body are acted on by the infant's organs and are disposed of in various ways. Much of it escapes through urine, fecal matter, exhalations from lungs and perspiration. Some of it, however, is added to the body as an increase. These processes are expressed in terms by Rubner as *Energie-Wechsel* (bodily activity) and *Energie-Bilanz* (increase). All duties performed by the body inclusive of adding to the growth are expressed by the term *Energie*.

The energy of a given food is expressed by the heat given off in its burning. The balance of food remaining in the body can be expressed in calories by deducting the amount lost through fecal matter, urine, etc., from the amount entering the body. Food given can be expressed in calories and is of greater significance than if expressed by weights and measures. It can be stated, *a priori*, that in a healthy infant of a steady, regular growth, for equal units of bodily weight we have equal working power in each individual case.

In this case the introduction of food or energy must be regular and of given quantity. By carefully examining a considerable number of normal thriving infants, being able to control them in every respect, so as to establish a proper basis for calculation, Heubner was enabled to express the energy power of the food required by the infants.

The daily amount of food required by a normal thriving infant expressed in calories per kilo (about two pounds weight) of infant is called energy quotient. A more thorough analysis of these infants showed that from the end of the third week to the end of the sixth month the energy quotient is 100 grammes; that is, for every kilo (2 lbs.) weight we require 100 grammes food (3⅓ oz.).

In the succeeding months to the end of the first year there was a gradual reduction in energy quotients. The amount of work required of the infants simply to preserve life—that is, energy power of the food taken minus the energy power of fecal matter, urine and growth—appears in the first six months to equal 70 calories per kilo weight daily. This has been proved by von Feer, Beuthner, Nordheim, and particularly Schlossmann, through various experiments to be approximately right for the first three months at least. Schlossmann is inclined to place the energy quotient to 110 grammes; this determination is based on milk obtained from wet nurses and reduced to calories. Czerny and Kellar have not succeeded and point out what they consider inaccuracies.

It will require further study and experience to prove whether they are inaccuracies or not. Not only in case of breast-fed infants is the food thus to be expressed, but in artificial feeding, the food can be expressed in calories and by learning the caloric value of the several foods used in artificial feeding we can easily compute or compound a food for an infant.

According to Rubner:

	Calories.
Mother's milk contains in 1 liter (dependent on fat contents)	614-724
Cows' milk, per liter	690
Two-thirds milk, per liter	480
One-half milk, (½) 10% sugar solution, per liter	500
Buttermilk (according to de Jager)	698
Liebig's soup (according to Kellar)	808
Allenburg's milk mixture	546
Asses' milk (Dresden)	502

One needs to know the weight of the infant to determine the quantity of the above foods to be given to satisfy its energy requirements.

An infant weighing 5 kilos would require 500 calories cow's milk; 700 calories to 1 liter. Therefore, we would require 5/7 of 1 liter of cow's milk or buttermilk; 1 liter ⅔ milk; ⅝ liter of Liebig's soup, etc. Of course, the above calculations premise that artificial food is as good as mother's milk. This we know is not so by a good deal.

A high percentage of nitrogenous contents in food for infants is not economical because a low percentage answers all demands. Further, nitrogenous food requires good digestive organs. The different proportions

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

of casein and albumin in cow's milk and mother's milk are well explained in all text-books and require no elucidation here. The differences, however, have greater theoretical value than a practical one. The differentiation and characterization of the several nitrogenous compounds in the organic fluids have not reached that stage which would allow us to come to any definite conclusions.

What is of greater importance is the presence in mother's milk of substances rich in phosphorus, as nuclein and lecithin, which are not found as well represented in cow's milk. In fact, there are more unknown substances which contain nitrogen in mother's milk than in animal milk.

Based on these chemical differences, as well as on the result of experiments, digesting nitrogenous compounds in test tubes, both of cow's milk and mother's milk, the conclusion was reached by different savants and so promulgated that cow's milk was hard to digest owing to the nitrogenous properties. This doctrine, however, has been disproved by experiments on infants. In fact, it was proved that the nitrogenous compounds, those of cow's milk as well, were easily and thoroughly digested (about 5.5 per cent. loss), and when not made use of in the body were chemically changed and passed in the urine.

This doctrine would not have received so much consideration and been so persistently believed, but the daily experiences seemed to prove it. A child could digest diluted milk quite well, but not whole milk. In whole cow's milk the nitrogenous compounds are far in excess of the same elements in mother's milk, while the fats and sugar are of about the same percentage; therefore, the nitrogenous bodies are the indigestible ones. This conclusion is probably right, but the explanation of the conclusion is interpolated and this is not right. That is, the conclusion is not based on rigid experimentation; it is not proved. Rubner and Heubner were enabled to study carefully the effects of artificial feeding—cow's milk, on two children, a seven months old child and a three months old sickly child—and from their observations and studies obtained a clearer idea of the digestion of nitrogenous compounds. What is the effect on an infant of a nitrogenous diet much richer than a breast-fed child obtains? It does not increase the growth of the child to any appreciable amount, but we have an increased destruction of nitrogenous compounds, and if we continue for some time this rich nitrogenous feeding we influence the metabolism of the body. The increased metabolic processes in the body increases the heat production. This was ascertained in the two children to be from 9 to 15 degrees daily more than in a breast-fed child. This overproduction of heat must be got rid of, and in the children examined it was accomplished through increased perspiration and exhalation from the lungs. This all means increased work for the infants.

The digestion and absorption of this richer food, the destruction and the disposition of the increased heat, all caused extra work for the internal organs without any benefit to the infant, no increase in growth or in repair of worn-out tissue. The increase of albumin in the cells of the body is not accelerated by a too rich nitrogenous diet, but is interfered with.

By continuing this rich nitrogenous diet, or rather, overfeeding, we injure the entire organism. This manifests itself first by loss of appetite. Observation has shown, particularly in delicate children, that it is always better to dilute cow's milk.

This dilution even during the first month of a full term baby does not need to be more than will reduce the proteids of cow's milk to equal the proteids in mother's milk. That is one part of milk and two parts of water. This mixture contains 0.9 to 1.0 per cent. proteids. Of this mixture the same amount is to be given as the child obtains from the breast when nursing, because if more were to be given the reason for diluting would be negatived.

If we were to give two or three times as much of this mixture as the child obtains when nursing we would give two or three times as much proteids and inorganic salts as we had determined, and also an unnecessary amount of water.

During the first month we give of this one-third mixture 400 c.c., at later periods of growth 600 or 700. c.c., in 5 or 6 meals daily if we wish to keep the amount of proteid equal to that of mother's milk.

It is clear, however, that this mixture has not the nutritive value of mother's milk volume for volume, because the non-nitrogenous bodies which are about equal in both fluids normally are reduced two-thirds in cow's milk.

This is the great evil in diluting cow's milk, but one that can not easily be remedied. Milk sugar, of course, can be added to 7 per cent., equal to the amount in mother's milk.

These differences are not the only ones resulting from diluting cow's milk. The organic substances containing phophorus, nuclein and lecithin, which whole cow's milk contains in less quantities than mother's milk, are still further reduced. The physical properties of this new mixture will be unfavorably influenced. It has been determined by Hans Köppes that cow's milk, notwithstanding its higher percentage of proteids and inorganic salts, has about the same molecular concentration that mother's milk has. Freezing point and electrical resistance will be disturbed and thus resorption will be unfavorably influenced.

Too great dilutions, 4 or 5 times, will conduct too much water to the system and overflood it. For these reasons it is not best to dilute cow's milk more than absolutely necessary. The highest dilution that physiologic conditions would allow is one part milk to two parts water. One part milk, two parts water, 8 per cent. sugar to keep sugar up to 7 per cent. in 100 parts.

	Proteids.	Fats.	Sugar.	Ashes.
33 parts milk	0.9	1.2	1.5	0.2
66 parts 8 per cent. sugar sol.....	..	..	4.3	..
	0.9	1.2	6.8	0.2

400 Calories.

This as a mixture, viewed as an ordinary chemical mixture, resembles mother's milk with the exception of fats. We can, however, increase the volume taken by the child by from 100 to 150 c.c. (from 3 to 5 oz.) over that obtained by nursing to overcome the deficiency in fat.

A simple way would be after the first two to three months to give the one-half mixture, which is as follows:

	Proteids.	Fats.	Sugar.	Ashes.
50 parts milk	1.5	1.8	2.2	0.35
50 parts 10 per cent. sugar sol.....	..	..	5.0	..
	1.5	1.8	7.2	0.35

500 Calories.

This mixture shows an increase of proteids and sugar over mother's milk, but deficiency in fats, and can be given in the same volume as mother's milk of the same period.

Finally, from the third or fourth months we may give the two-thirds mixture; that is, two-thirds milk and one-third water in 100 parts.

	Proteids.	Fats.	Sugar.	Ashes.
66 parts milk	1.8	2.4	3.0	0.47
33 parts 12 per cent sugar sol.....	..	..	4.0	..
	1.8	2.4	7.0	0.47
		600 Calories.		

This mixture contains almost the same amount of non-nitrogenous substances as a mother's milk, but the nitrogenous substances, salts, are double the amount in mother's milk. Experience shows us, however, that children of four months or over can easily take this mixture providing that the daily quantity given does not exceed one liter from the fourth month on.

It can not be emphasized enough that we should always know the daily quantity given. This point is frequently overlooked when prescribing the mixture.

With the above mixtures one can artificially feed and raise a normal healthy infant and thousands are being thus raised today. This one point will have to be emphasized again and again, that cow's milk and sugar of milk will have to be bacterially clean if we wish to have any success in artificial feeding.

It frequently happens that the child is not satisfied with the portions given and will cry for more, as if still hungry. It is then well to add an ounce or two of oatmeal gruel so as to give the feeding more bulk. A too rapid increase in weight will also have to be watched, as it indicates overfeeding and the quantity will have to be reduced.

Another point to know is that it requires two hours to empty the stomach completely after breast-feeding and three hours after artificial feeding. The stomach should always be empty before another feeding is given. When the time approaches for a feeding the child, if healthy, will cry for its food, and it should be allowed to cry for a few minutes. The time allowance should be rigidly adhered to. Food given before the stomach has emptied itself of the preceding feeding causes distress to the child and will make it restless and give it colic.

Less than needed should be given when first starting to feed.

By adding barley one need not give over 32 ounces in 24 hours before the child is 4 months old.

The attempt of Heubner and Camerer to apply mechanical principles to the processes of nourishment of the nurslings is declared by many pediatricians to be a failure, and so viewed by many more. Having made provision for energy requirements of the child, and it does not thrive, some observers declare that the application of the law of isodynamic representation of the different foods is inadmissible; in fact, they doubt the benefit of this mode of viewing things, and with this they have declared a doctrine as worthless that in every other field or department of physiology and pathology of nutrition has given invaluable results. No physiologist who earnestly considered his subject was ever of the opinion that the mechanical conception of nutrition solved the problem; it has always been pointed out and emphasized that, in connection with and conjointly, the chemico-physiologic side of the question deserves the closest consideration.

Those who make light of so fruitful and serious a matter and are inclined to be sarcastic are referred to the article of Camerer.[1]

There is no doubt but that in considering artificial feeding from the standpoint of energy units we obtain a new vantage ground, and one point gained, and not the least, is the capability of comparing the various foods in sickness and health.

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HEUBNER'S TABLES

TABLE I

Barley meal, 100 calories to an ounce.
Oatmeal, 100 calories to an ounce.
Flour, 100 calories to an ounce.
Sugar, 100 calories to an ounce.
Whole milk, 700 calories to quart.
Skim milk, 400 calories to quart.
Buttermilk (plain), 400 calories to quart.
Buttermilk, 1.5 per cent. flour and 6 per cent. sugar, 700 calories to quart.
Skim milk, same as one-third milk. Heubner.

TABLE II

100 calories to kilo body weight.

Based on 45 calories to pound of body weight. Must feed child in 24 hours.

2 ¼ oz. to pound weight, pure milk.
2 ¼ oz. to pound weight, ⅔ mixture with barley.
2 3/5 oz. to pound weight, Heubner's ⅔ milk.
2 3/5 oz. to pound weight, Heubner's ½ mixture. (Barley.)
3 oz. to pound weight, Heubner's ⅓ mixture with barley.
3 oz. to pound weight, Heubner's ½ mixture with barley.
4 oz. to pound weight, Heubner's ⅓ mixture.

TABLE III

HEUBNER'S MIXTURE—PROTEIDS AND FATS

	Proteids.	Fats.	Sugar.	Salts.	Calories.
I. ⅓ milk	0.9	1.2	1.5	0.23	...
⅔ 8 per cent. sugar sol..	..	..	5.8	...	400
	0.9	1.2	6.8	0.23	400
with barley (5 per cent)	..	..	3.3	...	500
			10.00		
	Proteids.	Fats.	Sugar.	Salts.	Calories.
II. ½ milk	1.5	1.8	2.2	0.35	...
½ 10 per cent. sugar sol.	..	..	5.0	...	...
	1.5	1.8	7.2	0.35	500
with 5 per cent. barley..	..	..	2.5	...	600
			9.7		
III. ⅔ milk	1.8	2.4	3.0	0.47	...
⅓ 12 per cent. sugar ..	..	..	4.0	...	...
	1.8	2.4	7.0	0.47	600
with 5 per cent. barley..	..	..	1.6	...	700
			8.6		

TABLE IV

Weight.	6th and 7th months. 700 calories. Whole milk.	4-5 months. 600 calories. ⅔ milk.	2nd 6 weeks. 500 calories. ½ milk.	1st 6 weeks. 400 calories. ⅓ milk.
lbs.	oz.	oz.	oz.	oz.
6	13½	15	18	24
7	16	17	21	28
8	18	20	24	32
9	20	23	27	36
10	22	26	30	40
11	25	29	33	..
12	27	31	36	..
13	29	34	..	..
14	31	37	..	..
15	34	39	..	..
16	36	42	..	..

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. LACKNER AND BOWDITCH

DR. HENRY KOPLIK, New York: About fifteen years ago I had the honor to introduce the Heubner method of infant feeding into this country. I introduced it in my dispensary in New York. It was surprising to see how well a large number of children could be fed on this caloric system. I published the results of my experiences at that time in a paper on the increase in weight of infants on artificial feeding read before the American Pediatric Society. The paper received a great deal of criticism, for the percentage method was then just coming into vogue. The trouble with Heubner's system is its lack of elasticity. Heubner says that we can substitute the fats by carbohydrates, but I found that very young infants, before the third month, would not increase in weight under the exact caloric amount. I think the problem is something deeper than the caloric coefficient. It is not the normal baby that we are

1. Jahrb. d. Kinderh., lvi.

called on to feed. The exceptional baby we have to feed will require something else. In these exceptional babies the digestive capacity of the stomach and the gut must be considered. Some little time ago I had an opportunity to compare some of the formulas in the American text-books with the caloric method and they came very close to the caloric needs of the infants at those ages put down, and it would have been unjust to criticise these percentage formulas from a caloric standpoint. It is not simply a matter of caloric coefficient, it is not a matter of percentages alone, but it is a question of the individual baby pure and simple.

DR. L. T. ROYSTER, Norfolk, Va.: We can not go by rule of thumb in feeding infants; the baby is to be studied. When I was a student in New York the feeding was done by a whole algebraic coefficient at which time the protein was vilified for all the troubles in infants. A little later the top feeding came along to simplify things, and it was very fortunate indeed. Then the fat was blamed almost entirely. In every instance in which a problem has been apparently solved, shortly thereafter the pendulum has swung away from that to the farthest extent. One of the older philosophers has said that "experience is fallacious," but through experience only can we acquire judgment, and only through seeing a large number of patients can any one determine that a certain formula will meet the requirements. And judgment, in the final analysis, is the court of appeal in the individual case.

DR. J. P. CROZER GRIFFITH, Philadelphia: I wish to compare the so-called American method of feeding with the German or "caloric" method. The trouble with the German method, as applied to infant feeding, seems to me to be its lack of elasticity. For instance, Biedert, years ago, developed in a thoroughly scientific manner certain "cream-mixtures," Nos. 1, 2, and so on. They were scientifically correct and it was a baby's duty to thrive on them. If the child did not thrive it was it's fault, not that of the mixtures. Then came the Backhaus mixtures, made fixed in the same way, and next put on the market as proprietary preparations. In fact, it is noteworthy that, contrary to the custom in America, many of the German proprietary foods were devised and named by physicians before they were patented. I do not question that German medicine, taking it all in all, is much ahead of us in the scientific study of infants and of the food which they require, based on the amount of nitrogen, phosphorus, and the like, ingested and excreted; but I think the American physician gives more attention to the needs of the child as an individual; his method is more elastic. The trouble with the caloric method, I think, is that, although scientifically exact, it can not be applied as well practically. It does not take into sufficient account the character of the food and the susceptibility of the individual child to certain ingredients. I consider it an excellent check on other methods of feeding, because by it we can tell whether a child is receiving a diet strong enough in calories to permit it to thrive.

DR. FRANK S. CHURCHILL, Chicago: I am a believer in the percentage method of feeding because I consider it the best, and we ought to take the best wherever we find it. I was taught twenty years ago that the individual baby must be considered in this matter of feeding, and have seen no reason to change my opinion since. Every individual must have a certain amount of food; he must also have a certain amount of fat, carbohydrate, proteid, etc., to meet the requirements of the system. We must figure out, so far as possible, just how much fat, sugar and proteid each individual, each baby, needs. At present we must depend more or less on our judgment as to what are these requirements; in the future I think that the physiologic chemists will give us much help in this direction. After determining what the baby needs, the caloric method may act as a check in helping us determine just how much the baby needs. In feeding atrophic babies especially I have found it of value to "check up" by calories, to prevent over-feeding. Yet the caloric method alone is not sufficient. For instance, I have seen babies fed by the caloric method alone, no attention being paid to the percentages of the different ingredients in the diet. The total calories were all right, according to the baby's weight, but he was not gaining in weight. Analysis of the formula would show that the fat was low (the advocates of the caloric method are fearful of fat), and correction in this direction resulted in the desired gain. We must have a well-balanced formula in feeding babies.

DR. H. D. CHAPIN, New York: One thing has not been taken into consideration in the comparison of the two systems. The feeding of the baby is practically for tissue growth. According to the caloric system we can run up the carbohydrates and leave out the fats and get the calories just right. We have just got our students educated up to the percentage system for food values, and if we are going to give them a long system of calories they will throw up their hands. There is no comparison between the two systems because the percentage system is right and the caloric system is only half right. The caloric system puts the emphasis in the wrong place.

DR. C. G. KERLEY, New York: Recently I investigated about 100 histories of infants ranging from 1 to 12 months of age who had thriven satisfactorily on artificial feeding. I estimated the caloric value of the daily amount of food each child had received. The infants were well, thriving and happy. I found that they had been getting from 100 to 300 calories a day more than Heubner's method called for. Since then I have attempted to feed other children according to the supposed caloric method and found that the New York baby is not satisfied and does not thrive when fed in this way. In fact, it was absolutely imperative to give more nourishment, as the children were hungry and failed to grow. If I had not given these babies food of a higher caloric value than Heubner states is necessary they soon would have ceased to be my patients. The element of waste is very important in the nutrition of children. Not all by any means is utilized that passes into the stomach. In one case, a physician's child, 3 months of age, I had to give 300 calories more daily than Heubner states is necessary. He had to have it. His father said he could not live in the house with him otherwise.

DR. CHARLES DOUGLAS, Detroit: Dr. Kerley's are exactly the principles I have been compelled to follow. A child of one month will digest more fat and more protein in proportion than a child of six months. I frequently find a child working up on a certain food, increasing steadily and without a single change in the food. If the caloric system were applied to that child with an increase in weight more calories would have to be given. I find that a child needs to be comfortable and happy, a happy child is always a successful child. A child who does not sleep and is not happy is not getting the right kind of food, or he is not getting enough or else too much food. Children vary in their digestive power at different ages. They digest the most simple parts of the carbohydrates and fats given them and the rest they throw away. The food that makes them comfortable is the best we can give them, and we must meet the child's ability in this regard.

DR. WALTER D. LUDLUM, Brooklyn: I have been more and more impressed with the worthlessness of the caloric method. I, too, have compared the average percentage formulas with the caloric and I have worked out the calories, and I find that in every case more is actually needed for the child's nutrition than is required by the Heubner method. I have used the Heubner method only as a check, for it provides for the sum total of the caloric value of the food and not for the different elements of it. If it is to be popularized it must be simplified beyond the present arrangement. To place such a chart as that before a class of students, or even of physicians, simply horrifies them.

DR. D. J. M. MILLER, Atlantic City: For many years I have been connected with the Children's Hospital of Philadelphia, and I have been impressed with the fact that the young physicians serving as internes have not been taught the principles of artificial feeding of infants. I hope that this discussion will be productive of one thing at least, *i. e.*, that students will be taught the basic principles of infant feeding and not the method of this and that man, for they are taught methods and not principles, now, and those of us who are interested in children see the disastrous results of this plan of teaching. One of the most successful feeders of babies that this country has ever had, the late Dr. John F. Meigs of Philadelphia, said that the most successful physician for a baby was the man who adapted himself to the needs of the particular baby.

DR. JOHN LOVETT MORSE, Boston: The gentlemen who have preceded me have voiced well my feelings as to Heubner's system of feeding. I have found the calculation of the caloric value of food useful as a check to prevent both over-feeding and under-feeding. It seems to me that there is a very general misapprehension in the middle west as to what is meant by the percentage method of infant feeding. The percentage method is not a method of feeding; it is simply a means of knowing accurately what we are giving the baby. We try to feed adults accurately and we write our prescriptions accurately. Why should we not determine accurately what we are feeding babies? There are many men in this country who, it seems to me, are ready to accept anything which comes from Germany without investigation or consideration and without comparison with American methods. Pediatricians in this country know what is being done in Germany; those in Germany know little or nothing of what is being done here. Judging from their writings, they are almost entirely ignorant of the best American methods of infant feeding. I believe that what German pediatricians most need at present is a course in infant feeding in some of our eastern cities.

DR. H. T. PRICE, Pittsburg, Pa: From the discussion here it would seem that all the German babies artificially fed should die. The foundation of the Heubner system is simply the aim to feed a low fat. Every sensible man will feed a baby what it should be fed to make it grow. The foundation of the Heubner school is chiefly a lower fat than has been the custom.

DR. ERNEST LACKNER, Chicago: I would like to know what Dr. Morse would do without tuberculin or any of the other things we use every day and for which we are indebted to the Germans. The Germans have the necessary schools and establishments for the pursuit of scientific work. Scientific matters are neither American nor European, they are universal, and any man who will criticise any physician for doing things as Germany is doing to-day should reconsider his remarks. What von Behring is doing to-day is enough, for through his efforts hundreds of thousands of lives are being saved. What is Ehrlich doing? The work of these men is certainly not American. This idea of being patriotic in science is impossible. I have given you to understand what Heubner means by his method of feeding. Heubner's feeding is not caloric, he has simply reduced down to calories and to energy units the food given the baby. I have a letter here from Heubner on this subject that will answer most of these objections in a general way. Cow's milk is not fitted for the infant, it has to be modified. Each child will have to be examined closely as to its idiosyncrasies in taking fat. Start with a low percentage of fat and work up. The Germans are not advocates of a low percentage of fat, they are simply trying to fit the amount of fat to the capacity of the child. As to the sugar, there are three which may be used. Jacobi has recommended cane sugar, and one disadvantage is that when you want to wean the child it does not like to be weaned from this very sweet mixture to something else. Then there is lactose or sugar of milk. It is slow in adding to the weight, but you can give large quantities of it and a child will seemingly scarcely gain in weight at all. By the addition of maltose it will increase very rapidly. Lactose must go through a certain process in the digestive canal, but maltose passes directly through the intestinal canal, and is worked on in the system. The child can be given twice as much maltose as cane sugar or lactose. Finkelstein explains how to determine the amount by Heubner's system.

DR. H. J. BOWDITCH, Boston: I am glad Dr. Morse said what he did about the percentage system of feeding. It is true that food for one is poison for another, and this is just as true in the feeding of babies as in adults. This trigonometry table may be of value but it is not a thing that should be taught to a student. The question has come up as to what should be taught the student. When I went abroad I found they were teaching the caloric method. I did not know anything about it and so was much handicapped. Students should be taught what it means and how, in the simplest form, calories are calculated, but we further ought to teach the student that it is not a method of feeding children. Every child has to be fed according to what we have discovered from its symptoms, its movements, and changes in the food.

THE INFLUENCE OF THE OLFACTORIES ON DIGESTION

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The sense of smell is probably the least valued of the five senses, and the rôle it plays in many of the important bodily functions is least appreciated by the human race. Among the lower animals it is more essential, for by this sense they find and select their food, as well as detect the approach of danger. Some of the savage, or so-called wild people, have this faculty as highly developed as the lower animals, and Humboldt tells us of some Peruvian Indians who could follow the scent of game as well as hunting dogs.

These facts, though interesting, do not come within the scope of this article, and, in order properly to discuss the influence of the olfactories on digestion, we should study this subject from an anatomic, a physiologic, and a psychic standpoint. It may be well to remind the reader briefly that the area of the terminal expansion of the olfactory nerve, the olfactory region, covers an area only about the size of a ten-cent piece in man, including only the upper part of the septum and the islands of the superior turbinate; detached islands are found in the vicinity of this chief olfactory region, but the remainder of the nasal cavity is fitted and used for respiratory purposes only.

There are certain essential differences between the olfactory and respiratory regions, the principal ones being as follows: The olfactory region possesses thicker mucous membrane, but is covered with only one layer of cylindrical epithelium, and contains a yellow or brownish-red pigment, while the respiratory region has a double layer of ciliated epithelium mixed with some goblet cells. The main difference, however, lies in the presence of the end organs of the olfactory nerves and the olfactory cells which lie scattered between the long cylindrical epithelial cells of the surface; also the fine olfactory hairs are present, projecting through the pores of a delicate structureless limiting membrane, covering the surface of the epithelium. It will be noted that the area devoted to smell is situated as far as possible from the external nares.

The sensation of smell is elicited by the presence of odorous substances in a gaseous state, coming in direct contact with the olfactory cells or hairs. This generally occurs during inspiration; but odors received through the mouth, and then expelled through the nostrils, may be smelled, though not accurately.

The first moment of contact of the odorous substance with the olfactories seems to be the most effective, for they soon "tire" of a continuous odor, and may be absolutely insensible to it, while retaining their usual acuteness for a different one; for this reason it is best to sniff, or take frequent short inhalations with the mouth closed. Some vaporous substances, especially those with pungent qualities, seem to act simultaneously on both the olfactory and gustatory senses, and Zwaardemaker describes some structures found in the olfactory region similar to taste buds. Nagel thinks, however, that this is only a stimulation of the gustatory nerves on the posterior side of the uvula.

While a morsel of food is being masticated there is free communication with the nasopharynx, except during the instant of swallowing. Immediately afterward a moist vapor charged with the odor of the substance in the mouth is carried into the nose. It is at this moment, but not while the fluid remains in the mouth,

that one "tastes" the aroma or bouquet of drinks. This faculty of combining smell and taste in a discriminating manner is highly cultivated by those who make a profession of judging the various teas and wines.

The digestion may be influenced by the olfactories in several ways—directly, reflexly through idiosyncrasy, or by some complex psychic process hard to analyze. It is estimated that it requires about 2,000 cubic feet of air to pass daily through the lungs of an adult in order to furnish enough oxygen to maintain good digestion, and, as the greater part of this air passes over the olfactory region, the content of odorous substances it contains may exert a marked effect on the alimentary tract.

That appetizing odors may make the mouth "water" by stimulating the salivary glands is well known, and Pawlow has shown that the gastric juices are fully as susceptible to the gentle suggestions of the olfactory organs. Every one who reads these lines can doubtless remember a past experience, when fragrant odors wafted by friendly breezes from some near-by kitchen not only whetted the appetite, but also brought about in the stomach that gnawing sensation which only a bountiful flow of the digestive juices can produce.

On the other hand, no one factor can exercise a more malign influence over the appetite, and with it the digestion, than foul or repulsive smells; for we must admit that, as Bassler well says, "viewing the body as a whole, a marked disturbance in any organ outside of the digestive canal acts as a chestnut-burr irritation in upsetting the normal nervous balance of the neurologic system, and that these abnormal stimuli manifest their effects most easily on the digestive organs, which, through abundant sympathetic supply, are most sensitively balanced." As some loathsome sight or a disgusting mental picture may kill the appetite and "turn" the stomach, so a foul odor, through its reflex action, may just as effectually dry up the "appetite juices." Even after digestion has normally begun, the presence of a disagreeable odor may retard its progress, and, by inhibiting the secretion of gastric juice, and checking the motor waves of the stomach, may allow stagnation, bacterial fermentation, and the formation of gasses and irritant decomposition products.

The influence of odors and perfumes on many people is exceedingly marked. Some there are who can not remain where lilacs are in full bloom, or bear the odor of jasmin; others are given a headache or are nauseated by heliotrope or tuberose, while the smell of cantharides often causes vertigo and a sinking sensation in the epigastrium. Even the fragrance of roses has an irritating and nauseating effect on some. Attacks of real illness, with long trains of digestive disorders following in their wake, may be brought on by odors.

I recently saw, with Dr. J. L. Campbell of Atlanta, a middle-aged woman who was affected with nausea and vomiting by the smell of fish, mutton, turpentine or butter-beans, and, unless she got away from these odors quickly, severe purging and prostration set in, rendering her as ill as if she had been suffering from some form of ptomain-poisoning. Strange to say, she could eat either fish or mutton with relish, and without any discomfort, if she could prevent their odors from reaching her olfactories.

I have seen several individuals who, having been made sick by some article of diet in the past, experienced the most lively repugnance and nausea at the slightest whiff of the well-remembered article for months or years afterward.

Dr. J. D. Thomson of this city has reported to me the case of a veteran of the late war between the states, who was surfeited with onions during his war-time experience. The cooking facilities in camp being limited, the taste and odor of onions permeated every mouthful of food and drink, and now, after a lapse of over forty years, he can not eat in comfort where the smell of this vegetable is in evidence.

That offensive odors may not only derange the digestion, but may cause even death, and that the most horrible, was recognized about the time of Alexander the Great. One of the methods then used for executing a criminal guilty of some specially revolting crime was to manacle the living man hand to hand, foot to foot, and neck to neck to a dead body; and it was found that the vile effluvia emanating from every pore of the putrefying corpse, coupled with the awful psychic abhorrence, speedily quenched the vital spark of the hapless victim, no matter how powerful the physique or callous the mind.

Every intelligent observer will grant that these resentments to odors, in some cases, are real idiosyncrasies and not the manifestation of pretense or prejudice. The fact can be explained only as a pathologic phenomenon exerting its main force on the most vulnerable point of the human economy, the gastrointestinal tract. Such conditions can occasionally be aided by a general toning up of an unstable nervous system, but, as a usual rule, the only safety lies in avoidance, if possible, of the repulsive odors.

As offending scents may set in motion a train of morbid digestive symptoms, so, on the contrary, those that are sweet and agreeable may exercise a highly beneficial effect. The Orientals appreciate much more than we the delightfully soothing influence of pleasing perfumes, having developed within themselves to a notable degree the faculty of deriving the most enjoyment from inhaling fragrant odors. The most beautiful creations pictured in the imagination of Mohammedans are the houris, represented in the Koran as nymphs of Paradise, formed of musk, who exhale from their lovely bodies entrancing perfumes.

We are told by travelers that it is the custom of many Eastern peoples to spend after each meal a season of quiet, while the air around them is rendered fragrant by a fine mist; or, this not being convenient, a bottle of their favorite perfume is constantly inhaled. Even the poorest indulge in this habit, for they all, rich and poor alike, feel that it benefits both their nerves and digestion. By smokers the aroma of tobacco is greatly prized, and all unprejudiced observers will grant that a good cigar, coupled with a serene mind, will often materially help in the proper disposal of a hearty meal. Many have also noticed the speedy peristalsis of the bowels, which would otherwise be lacking, set up by an after-breakfast smoke.

It would seem that a psychic state favorable to the digestive processes may be induced through the olfactories fully as well as through the other senses, and I believe that this almost fallow field may be cultivated profitably by the gastroenterologists.

Since we admit that the commonly seen symptoms of cessation of digestion, spasms of the cardia or pylorus, anorexia, nausea, vomiting or diarrhea may be brought on by insulted olfactory organs; and, as all of us realize the danger to individuals and communities from noxious vapors, it would seem a worthy endeavor to study these agencies intelligently, that we may avoid the evil and extract the good that in them lies.

The different functions of the body vary in their importance as do different stars in brilliancy, but each has its proper rôle, exerting its own quota of authority. Let us not, therefore, deem unimportant this humble faculty of smell, which, though modest, is always alert and discriminating, and whose influence over the whole digestive system is becoming more and more appreciated.

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A STUDY OF THE ANATOMY AND THE CLINICAL IMPORTANCE OF THE SACRO-ILIAC JOINT*

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Some time ago the writer was much surprised, on reading the literature of the minute anatomy of the sacro-iliac joint or synchondrosis, to find such a marked disagreement among the most prominent anatomists and gynecologists. To quote in brief from some of them: Morris holds that even the presence of synovial membrane is not constant, stating that it is more apt to be present in the female. Luschka believes that a small amount of synovial membrane is always present and that it increases in size at times of pregnancy. Cunningham states that the synovial cavity is imperfect and rudimentary, but believes that hyaline articular cartilage exists usually. Testut, the great French anatomist, mentions certain folds of synovial membrane which occur here and there, filling up gaps or margins of the fibro-cartilage. Morris denies that there is any appreciable movement at this synchondrosis. Williams (in 1903) states that "the articulation between ilium and sacrum is described as a synchondrosis, but is really a joint, on account of the presence always of more or less synovial membrane." Kuttner asserts that it is a joint with motion and that the horizontal position increases the true conjugate diameter of the pelvis by 6 mm. and Walcher's position by 9 mm., as compared with the lithotomy position.

On account of the above-mentioned disagreement of the best authorities as to the anatomy of this joint, with emphasis on the term "joint" rather than synchondrosis, I was induced to ascertain, if possible, by the dissection of a sufficient number of joints, its true anatomy. By the kindness of Professor Haynes an abundance of material was furnished me at the Cornell University Medical College.

The results of this work are briefly as follows: In the careful dissection of fifty specimens a perfect joint, composed of all its elements, such as synovial membrane and cavity, and strong well-formed capsule was found in each instance, and proved to be as constant in its size and relations as any other joint. Before opening the joints many were injected with an aqueous solution of methylene blue, which colored the synovial membrane so that it could be seen to distend and retract all along the anterior-inferior aspect of the joint when motion was elicited. This part of the capsule is very thin, which accounts for the fact that infection of this joint is very prone to discharge by this avenue into the pelvis and rarely through the very thick part of the capsule posteriorly; also, this part of the capsule often ruptures in symphysiotomy, and in case of puerperal sepsis opens the joint to infection. Sansten states that it ruptures in 44 per cent. of cadavers below 6 c.c. of pubic separation. The lumbosacral cord passes in close proximity to the joint at its lower third, and undoubtedly is frequently involved in affections of this joint, thus explaining the presence of persistent pain in the distribution of this nerve, i. e., sciatica.

The articulation is easily opened by incising the anterior part of the capsule and forcing the pelvic bones apart in front, the symphysis pubis having already been separated. The sacrum and the ilium swing on the posterior and interosseous ligaments, as a door on its hinges. Hence the infrequent interference with locomotion and permanent injury of this joint following symphysiotomy.

In my dissections the interosseous ligament always separated from the ilium and never from the sacrum. The round ligament sometimes ruptured and sometimes its bony attachment. The anterior or auricular portion of each articular surface was covered with a thin plate of cartilage, which was thicker on the sacrum than on the ilium. It averaged, in the fifty specimens, in its greatest length, 7 cm. (2 3/5 inches), and in width 3 cm. (1⅛ inches). The largest joint area of hyaline cartilage was 8 cm. (3 1/16 inches) in length and 3 cm. (1⅛ inches) in width. The smallest was 6 cm. (2¼ inches) in length and averaged in width 2½ cm. (15/16 inches).

The posterior irregular part is the attachment of the interosseous and round ligaments, around the latter of which most of the motion occurs as about an axis. One joint was affected with osteoarthritis and the anterior part of the joint was obliterated with bony deposit, which also extended into the posterior ligament.

Let us now consider briefly the mechanics of this articulation. The sacrum is an inverted key to an arch suspended principally by the posterior sacroiliac ligament. The base of the sacrum, in the upright position, projects forward beyond the articular surfaces of the ilium and has a tendency to tip down. This is prevented by the sacrosciatic ligaments, which tie the lower part of the sacrum to the ischium. Here is a great articulation placed at the cross-roads, so to speak, between the trunk and the thighs and mechanically imperfectly constructed to sustain sprains and injuries.

Distinct motion was elicited and measured carefully in every specimen except one and motion was absent here, as stated above. These researches were carried on in conjunction with Dr. Henry L. Taylor and will be reserved for a future publication. Sixteen of the cadavers were placed in Walcher's position[1] and the true conjugate diameter of the pelvis averaged an increase of 8 mm. (⅓ inch). Walcher obtained 9 mm. on the living subject.

My interest in the pathology of this joint was first stimulated by seeing a case of relaxation of this joint with Dr. Goldthwait of Boston in 1903. This was before the publication of the monograph on this subject by Dr. Goldthwait and Dr. Osgood, who were the first to demonstrate the existence of such a condition. The relaxation in the case referred to was caused by lying for a very long time in the position of dorsal decubitus following a pelvic operation.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* From the anatomic laboratory of Cornell University Medical College.

1. Patient on back with her legs hanging over the edge of the table.

Under favorable circumstances, however, this joint will stand much abuse, as in the case of a symphysiotomy. Edgar reported five cases in which he obtained from 2 to 2½ inches of separation at the symphysis followed by firm union and without symptoms. Nevertheless, this articulation is liable to all the affections of other joints and in the event of infection the prognosis is often serious, because, first, it is very likely to be a metastatic infection from some other part of the body, and, second, as described above, on account of the danger of spontaneous drainage forward into the pelvis.

ILLUSTRATIVE CASES

CASE 1.—*History.*—Miss N. M., was seen by me Feb. 25, 1906. She worked in a web factory; her previous history was negative. Last October she fell over a large stone in the country and strained her back, and was in bed two weeks. This was followed by inability to stoop, lie on back, or stand on right foot, without severe pain in extreme lower part of the back, which always remained in the same place and became more severe at her menstrual periods. The patient's only comfortable posture was lying on the left side.

Physical Examination.—Total lateral spinal curvature to the left. Spine normally flexible. Hip and other joints normal. Very distinct tenderness over lower part of right sacroiliac joint. Goldthwait's symptom present, i. e., pain in region of sacroiliac articulation, when the thigh was flexed with extended leg to a right angle or less. Pain produced by standing on right foot; most severe, however, when patient attempted to turn over, while in a reclining position.

Treatment.—Pelvis was encircled by very tight two-inch bands of surgeons' adhesive plaster just below the anterior-superior spines of the ilia. Patient reported in one week entire relief. The strapping was reapplied, at periods of a week, four times. A long corset with a four-inch elastic webbing belt at bottom to grasp the pelvis was then made, which has been worn with entire relief every since.

CASE 2.—*History.*—Miss A. O., aged 15, was referred to me by Dr. A. A. Crane, Waterbury, Conn., Feb. 20, 1906. She attended school and practiced on the piano a good deal. Previous history was negative. The patient has had pain continuously in lower part of back ever since falling on the ice three years before. There was an increase of pain at the time of each menstrual period, although menstrual fluid had not appeared. Pain was produced by walking, sitting, especially on the affected side, or laying on the back. The patient never lays on the back, always on the left side.

Physical Examination.—Fairly well developed and nourished girl. Examination negative except for marked total spinal curvature to the left. No rotation. Tenderness over upper part of right sacroiliac joint. Spine normally flexible except in its extreme lower part. Goldthwait's symptom markedly present. Pain elicited by patient standing on right foot and lying on the back.

Treatment.—This was same as first case. The relief was marked, although for three years the patient had been under constant treatment without the slightest amelioration of the symptoms. Three months later the patient reported that relief had continued and that she had gained ten pounds in weight.

I am indebted to Dr. H. H. A. Beach and Dr. R. B. Osgood for the privilege of reporting the following case:

CASE 3.—*History.*—F. C. R., a man, aged 23, entered the Massachusetts General Hospital, Dr. Beach's service, Sept. 28, 1905; occupation, mechanic. Past history was negative; no rheumatism. Three months before, while carrying one end of a heavy canoe the patient stepped into a hole and felt something slip in the lower part of his back. This was followed immediately by pain when sitting or turning in bed. The patient and his friends noticed that his right hip was becoming more prominent than the left. The pain increased also.

Physical Examination.—Very frail physique. Thorax and abdomen negative. Body tilted to left when patient stood, set or reclined. Flexing extended leg on pelvis caused pain when a right angle was reached. Forward and backward motions showed that the spine is held rigidly on the pelvis. Lateral motions of the spine were normal, from the mid-dorsal region upward. An *x*-ray picture showed a dislocation of the right sacroiliac joint.

Treatment.—Ether was given October 6 and Dr. Osgood reduced "the right ilium to its normal position, so that its crest came on the same level as that of the left ilium and so that the sacrum seemed in its normal relations." A long plaster-of-Paris jacket extending well over the hips was then applied, with the lumbar spine in extreme lordosis. I saw this patient Oct. 8, 1905, and at that time he was walking about without pain or deformity.

CASE 4.—*Patient.*—M. G., a married woman, aged 35, was seen at the Post Graduate Hospital in June, 1906. Past history was negative. One year ago patient had a very difficult labor, forceps having been necessary. The convalescence was normal except for a great deal of trouble with the lower part of the back, on account of which she remained in bed six months. Patient stated that the first thing she noticed was pain and "a grating sensation" in that region, and indicated the left sacroiliac joint as its location. The grating lasted two months and slowly disappeared. The pain, however, persisted unabated and was much exaggerated at her menstrual periods. Stooping, standing on left foot and lying on back, caused pain in this region.

Physical Examination.—Patient well nourished. Total spinal curvature to right, patient sitting more comfortably on the right side. Tenderness to deep pressure over lower part of the left sacroiliac joint. Goldthwait's symptom present.

Treatment.—Pelvis was strapped and relief was immediate. The strapping was continued for six weeks and then a long corset with a webbing belt was fitted. The relief had continued when the patient was last seen.

CASE 5.—Dr. M. H. was attending the lectures at the Post-Graduate Medical School in July, 1907, when I demonstrated a case similar to the above cases. The relief from the strapping was so marked that the patient threatened to leave a cane, on which he was so dependent only a few minutes before. Dr. M. H. was so impressed with the similarity of his own symptoms that, after the lecture, he came to me and stated that he felt sure that he was suffering from the same condition. He said that he had sought relief without avail, from many sources, including his colleagues and several members of the faculties of the Post Graduate Medical School and the Rush Medical School in Chicago, of which latter school he was a graduate. He had been thrown from the back of a horse two and a half years before, from which time symptoms dated. The result from the above-mentioned treatment in his case was as striking as in the case he had just seen.

A sixth case represents, with the postoperative case already cited, a class in which a relaxation occurs from a long-continued strain on the ligaments, as contrasted with a sudden trauma.

CASE 6.—The patient was a man aged 45; his symptoms dated from the time he had held, for a considerable time, in a stooping position, a heavy plate-glass window, while a fellow workman fastened it in place. This patient had a convalescence similar to the others but slightly prolonged, which, by the way, is very liable to be the case in this type of trauma, according to my experience.

CASE 7.—*History.*—M. G., a man, aged 21, was seen May 12, 1907. For the past year the right knee had been very painful and had been in a plaster-of-Paris splint most of the time. The patient had used crutches most of the time. His general health had declined and he had lost considerable weight. Four months before he was seen he began to have pain in the lower part of the back, especially when walking, stooping or turning over in bed. The past few weeks the pain had become much more severe. The decline in the general condition had been more rapid. The appetite had become very poor and the patient thought that he had a fever each afternoon.

Physical Examination.—The patient was very poorly nourished and pale; temperature 101 F. at 3 p. m. There was considerable swelling about the right knee. It was flexed about 15 degrees and very sensitive to slight passive motion. Condyles of femur were apparently enlarged; tibia somewhat subluxated.

There was a total lateral curvature of the spine to the left. The lumbar region was held very rigidly. There was considerable swelling and deep fluctuation over the right side of the sacrum. A rectal examination disclosed a tumefaction and questionable fluctuation on the right side of the pelvis in the region of the anterior-inferior part of the sacroiliac joint. A diagnosis of tuberculosis of the knee and the right sacroiliac joint, with secondary infection and rupture of the latter into the pelvis was made.

Treatment.—An incision over and down to the joint was made posteriorly. The portion of the ilium overhanging and obscuring the joint was chiseled away and apparently good drainage secured. The patient rallied somewhat after the operation and disappeared from observation. His death was reported two months later.

CONCLUSIONS

1. The sacroiliac articulation has all the elements of a joint and therefore has a similar pathology.
2. It has motion and plays an important rôle in labor.
3. Its variation, according to individual, age or sex, is very slight.
4. Its anatomy is such that drainage into the pelvis is very apt to occur, and, therefore, in the event of infection, early posterior drainage is often indicated.
5. Its affections are, undoubtedly, the cause of many obscure and unexplained backaches and persistent sciaticas.
6. The important ligaments of this joint are so placed that the sacrum and the ilium swing open, in the event of a symphysiotomy, as described above, and little permanent damage results, even if the pubic separation has been great enough to rupture the unimportant anterior-inferior part of the capsule.
7. The relaxation of this articulation should be guarded against by support of the lumbar spine with pillows, etc., in cases of protracted postoperative convalescence. Undoubtedly, many here can recall instances of Nature's warning, in the form of a convalescent's backache, which the nurse so readily relieved by merely placing a pillow under the lumbar spine.

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ABSTRACT OF DISCUSSION

DR. C. C. FREDERICK, Buffalo: The important point that the paper raises is the differential diagnosis between conditions in the female pelvis that are due to pathology of the female pelvic organs and those conditions which so simulate disease of the pelvic organs, but are not due to disease of these organs but to the conditions that Dr. Albee has just mentioned. Over a long series of years we have all had women come to us, young and old who have been treated by all the various methods employed for the relief of pain in the back, pain down over the appendix, pain in the ovarian region, tenderness in the pelvis, etc., the pelvic organs being blamed for the pain, discomfort and neurasthenia. If we go back into the history of these women we will find a fall or accident to which at the time little attention was paid. Gradually, however, symptoms developed over a number of years and the women have become semi-invalids with neurasthenic symptoms, pain in the pelvis, dysmenorrhea and all the ills of women. A pelvic examination in every one of these cases will elicit the greatest amount of hyperesthesia. The vagina, uterus, tubes, introitus are tender. Every bit of tissue below the brim is tender, presumably due to some intrapelvic condition. The patients have been tamponed and treated and it is almost impossible to convince the attending physician and the patient that the condition is not intrapelvic but due to trouble in the sacroiliac joint. This can be easily proved in a certain number of cases by the relief that comes from good hip support and support of the iliac joint. The period of time that elapses and the persistence with which the treatment must be followed up, the slowness of recovery from the injuries done to the tissues about the sacroiliac joint, and especially to the delicate nerve distribution make the hope of the patient ofttimes drop below par and cause her to think that a mistake in diagnosis has been made. I believe, however, that almost every one of these patients can be cured by the use of the hip bandage, leaving out of the treatment all intrapelvic tinkering and everything addressed to the intrapelvic organs. I have seen women whose ovaries have been removed, who have been curetted and subjected to other operative procedures and yet the pain has persisted.

DR. REUBEN PETERSON, Ann Arbor: I want to speak of just one phase of the subject, not of the difficulty of diagnosis in these cases—although we know that that is hard enough. If one is not fortunate enough to be associated with a competent orthopedic surgeon I have found it most difficult to make a correct diagnosis, for it is by no means a simple matter to say in one case, this is due to pelvic disease, and in another this is the result of sacroiliac disease. Some time ago I looked into the question of the pain my patients experienced after operation. It seemed to me that it was all out of proportion to what it should be, and almost invariably the pain was in the back. I have no doubt that others have had the same experience with patients after operations. Finally, my head nurse suggested that the pain might be due to the patients lying for some time on a hard operating table. At that time we used the ordinary pad seen on most operating tables. This pad was changed to one made like a mattress, between two and three inches thick, and covered with rubber with a sterilized covering over that. Ever since I have employed this kind of pad for my operative work, even in prolonged operations, my patients have not suffered pain in the back. Then I had the pleasure of hearing it scientifically explained by Dr. Goldthwait of Boston, who showed that either in the Trendelenburg or the lithotomy position, when the assistant inadvertently leans on the legs of the patient, strain comes on the sacroiliac joint. Many times we have relieved the pelvic condition but our patients have been worse because of this sacroiliac strain. We are just beginning the study of this complication and it is only by working in conjunction with an orthopedist or studying under him, that the gynecologist can ever make headway in the treatment of pain in the sacroiliac region. Certainly it has opened up a field that the gynecologist never before suspected and the results of such study ought to be of great assistance to our patients.

DR. C. W. BARRETT, Chicago: I recall a case in which with pelvic infection following abortion there was inflammation of the sacroiliac joint, giving marked tenderness on deep pressure over that joint, but more marked tenderness on succussion of the pelvis. Succussion on the trochanters and crests of the ilium gave marked pain in the right sacroiliac joint. The treatment of the pelvic infection caused that to subside, or it subsided, without treatment and the joint recovered from the inflammation without any drainage or any direct treatment for that condition.

DR. MYER SOLIS COHEN, Philadelphia: I think this discussion should not close without mention of Dr. Goldthwait's work regarding the conditions caused by straining of the sacroiliac joints. He shows that by standing in an improper position the curve of the spine is lost, the sacrum tilted backward, and strain put on the sacroiliac ligament. He also shows that the straight front corset and other bad forms of clothing cause lordosis which tilts the sacrum forward, thus also straining the sacroiliac ligaments. He also calls attention to accidents such as falling from horseback as being responsible for this condition.

DR. A. J. WINEBRAKE, Scranton, Pa.: The sacroiliac joint is more abused from ignorance than any other joint in the body. It is much abused by the ignorant practitioner in the application of forceps who has no time to wait and knows nothing of the mechanism of labor. He makes the high application of forceps and pulls with all his brute strength and the patient is rendered practically an invalid, due to injury to this joint and soft parts. This abuse is going on all over the country. In the race for money men have not time to wait in the prac-

tice of obstetrics and give Nature a chance. We are taught not to make examinations because there is always danger of infection. This is a grave mistake. An examination can be made with safety if the examiner is as careful in putting the finger into the vagina as in putting it into the abdomen. Something will then be known about the mechanism of labor in the abnormal case. It is surprising how many turns the head will make which cannot be guilded with a pair of forceps. I think that Cesarean section is a simpler operation than high forceps application. The latter operation in my opinion requires more mechanical skill and more good judgment than Cesarean section.

KELOID: A COMPARATIVE HISTOLOGIC STUDY *

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Reduplication of fibroconnective tissue of the skin to the extent of inducing tumor formation of neoplastic character is probably one of the most infrequent of histologic anomalies. This is all the more remarkable when we realize its abundant and universal distribution, the facility and promptness with which it reproduces itself and its constant exposure to insult and injury. Fibroconnective tissue stands in marked contrast, in these respects, to the other elements and structures of the skin, namely, the epidermis, hair follicles, sweat and sebaceous glands. The latter show a more marked tendency to reduplicate themselves to the degree of tumor formation and pathologic overgrowth, and when they are traumatically or pathologically removed or destroyed, with the exception of the epidermis, are prone to be replaced by fibroconnective tissue.

The clearest and probably the purest and most common type of fibroconnective tissue tumor or new growth is keloid. Many pathologic affections of the skin, namely, molluscum fibrosum, multiple fibroid new growths (so called), myofibromata, neurofibromata, angiofibromata, etc., have been erroneously classed with the fibromata and do not possess a clinical or a histopathologic analogy. We occasionally meet circumscribed lesions of pure fibroconnective tissue of varying size, with elevation, consistence, dimensions and definite proportions, either imbedded in the cutis and subjacent tissues, or lying freely on the surface, which are the direct result of the prolonged reaction of the tissues against the presence of a foreign body, or some other form of protracted irritation. These lesions are histologically pure fibromata, but are essentially non-pathologic and non-neoplastic in character, inasmuch as they possess no innate tendencies to enlarge or encroach on healthy areas, but expend their energies against diseased or pathologic agencies of which they are the indirect result. They are not, properly speaking, tumors or new growths in the commonly accepted sense of these terms. The same is true of the hypertrophic cicatrices which are the result of syphilitic, tuberculous and similar processes which primarily or secondarily involve the skin. Inasmuch as they are the indirect result of conservative agencies against pathologic and diseased conditions, they are not fibromata in a pathologic sense, though they possess an identical or indistinguishable histologic structure.

The disposition to divide keloid into true and false, and again to differentiate the latter carefully from hypertrophic and ordinary scar tissue on clinical and histologic grounds, although becoming more and more generally discredited, is still closely adhered to by many authors and investigators. It is generally conceded that the vast majority of keloids develop from pre-existing scar tissue, usually the result of some evident form of traumatism. Not every trauma, even in predisposed individuals, is necessarily followed by keloid, and in many instances keloids develop on areas which have not been the seat of any manifest injury or cicatricial change. This clinical observation has led to the arbitrary division of keloid into true, genuine, spontaneous or idiopathic, on the one hand, and false, spurious, traumatic or cicatricial, on the other. Repeated efforts have been made from time to time to strengthen this clinically empiric division by a differential histopathology, based chiefly on such gross characters as its deep or more superficial origin and location; the preservation or absence of the overlying papillæ, elastic fibers, hair follicles and glandular structures; the firm fibrous or loose cellular character of the growth; the arrangement and distribution of the fibrous bundles; vascular and other changes. Similar studies and investigations have led to a differentiation of false keloid from hypertrophic scar, and the latter from the ordinary depressed scar. Lack of unanimity of clinical opinion and uniformity of pathologic results have led to somewhat divergent views on the subject. The two latest, and in many respects most exhaustive and complete researches on the subject by Max Joseph[1] and Tschlenow[2] take grounds adverse to each other on many of these important points.

Those who oppose the division of keloid, on clinical grounds, into true and false, or spontaneous and cicatricial, maintain that traumatism plays the predisposing though imperceptible rôle (pin-prick, mosquito-bite, scratch effects from seborrheic eczema, etc.) in every case. This assumption is as difficult to prove as to disprove, and is manifestly more arbitrary and less empirical in character than the converse proposition. The remaining clinical features are sufficiently identical to warrant a classification on purely histopathologic grounds. For the purpose of reaching a closer knowledge and a possibly clearer conception of the points of controversy in the keloid question, I have made a comparative histologic examination of seven cases of spontaneous keloid and three cases of false keloid; for a comparative study of general fibrous tissue, in its relation to false and true keloid, I have added one case of soft simple fibroma, two cases of hypertrophic scar, two of atrophic scar, two of scleroderma and two of macular and striated atrophia cutis.

The following, in brief, is the clinical history and description of the cases which enter in the histologic consideration of the paper:

CASE HISTORIES

CASE 1.—*False Keloid.*—L. H., negro, aged 30, received an incised wound 1½ inches long over the left arm, midway between shoulder and elbow, in 1897. The wound was sutured, healed by first intention, but promptly became the site of a keloid. In 1900 the keloid, which was elliptical in outline with sharply circumscribed but sloping borders, with its surface transversely traversed with numerous fine rugæ, measured 4 inches in length, 1 inch in breadth, and about ¼ inch

* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* This paper is accompanied by twenty illustrations, of which only Figures 1-9 and 17-19 appear in THE JOURNAL. All appear in the Transactions of the Section and in the author's reprints.

1. Joseph, Max: Gutartige Neubildungen, Mracek's Handbuch der Hautkrankheiten, Vienna, 1904, iii, 441; See also articles by Joseph: Arch. f. Dermat. u. Syph., 1899, xlviii, 138; xlix, 277.
2. Tschlenow: Dermat. Ztschr., 1903, x, 120.

in height. Two short "runners" extended from one end and the middle of the lower border, and several isolated nodules were present over the site of the old stitches. The patient presented himself in March, 1909; the keloid in the past nine years had undergone very slight change. The extirpated extremity became the site of a fresh recurrence, in the form of a bifurcated rounded thickened mass. The central portion had undergone an appreciable degree of spontaneous involution. The borders had not enlarged or encroached to any marked degree on normal new areas in the past nine years.

CASE 2.—*False Keloid.*—Mrs. S. J., aged 33, full-blooded negress, was cut in 1896 over the middle of left cheek just below the ear, and the wound healed by first intention. It promptly became the site of a keloidal scar, which in 1901 was

Fig. 1.—False keloid taken from Case 1.

firm in consistence, rounded and cylindrical in outline; the surface was covered with characteristic rugæ. Several long, characteristic runners extended from the anterior extremity.

CASE 3.—*False Keloid.*—L. S., aged 18 years, referred by Dr. Bronson of New York, developed several small keloids on the chest from burns incurred in pouring hot tea. The keloids were surgically excised and the resulting incisions, which healed by first intention, together with the stitch holes, became the site of characteristic keloids. Two of these were again extirpated on May 27, 1907.

CASE 4.—*True Keloid.*—Mrs. A. J. M., aged 26, developed a spontaneous keloid on the sternum at the age of 15, which was surgically removed by a New York physician in 1907, followed by union with first intention. Recurrence promptly ensued; I extirpated the recurrence on May 16, 1907, within several months of the time of the first operation, and successfully withheld further recurrence by means of ten *x*-ray

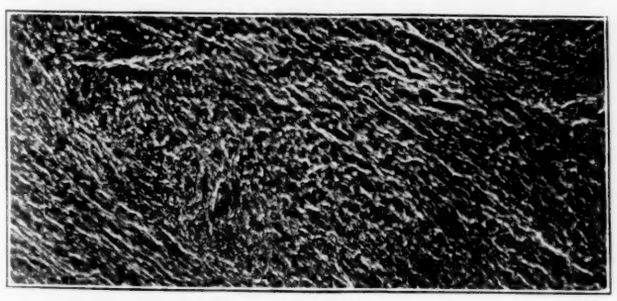


Fig. 3.—False keloid taken from Case 3.

sittings. On March 5, 1909, on the occasion of a requested visit, the original site of the keloid was occupied by a smooth, white, depressed and scarcely perceptible scar.

CASE 5.—*True Keloid.*—Mr. A. I., aged 62, developed a spontaneous keloid on the left chest near the sternum, the size of a large butter bean, of several months' duration. It was firm in consistency, pinkish in color, non-sensitive to touch or pressure, and free from subjective symptoms, save mild itching. The center was round and elevated, borders sloping and well defined, and surface faintly wrinkled. The lesion was excised January 28 and after eight *x*-ray exposures, no recurrence followed.

CASES 6, 7, 8 AND 9.—*True Keloids.*—All spontaneous and of idiopathic origin, of varying duration, one of which was situated on the chest, one on the thigh and the two remaining on the forearm. All were very small, varying from a shot to a bean in size. Surgical extirpation with *x*-ray after-treatment, was not followed by recurrence in a single instance.

CASE 10.—*Simple Fibromata.*—Miss C. N., aged 38, presented two small tumors, over the posterior aspect of each arm near the shoulder; the left one, which was about the size of a marble, soft in consistency and somewhat pedunculated, resembled clinically a molluscum fibrosum. The overlying skin was normal in appearance. Its duration was about two years, and its origin spontaneous and non-traumatic in character. The larger lesion was removed Feb. 14, 1909, and the smaller Feb. 21, 1909. A keloidal bluish-red, firm, elevated cicatrix formed at the site of each incision on May 7, 1909,

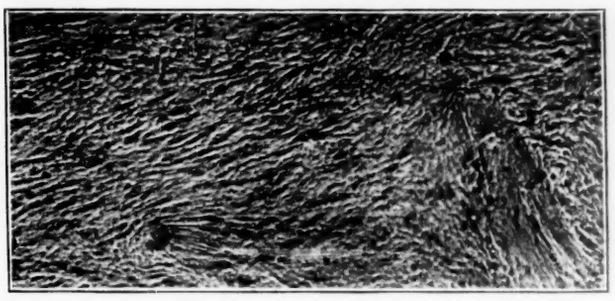


Fig. 2.—False keloid taken from Case 2.

and has already shown a marked tendency to subside under *x*-ray therapy. The histologic structure of both lesions was essentially pure fibrous connective tissue.

CASE 11.—*Hypertrophic Scar.*—Miss L. R., aged 26, suffered in girlhood and early youth from suppurating tuberculous glands of the neck, which repeatedly ruptured; the resulting ulcerations became the seat of numerous rough, irregular, hypertrophic scars. Numerous dense, heavy ridges coursed over the affected scars. No active inflammation had been present for the past six or seven years. In 1901 a portion of the most disfiguring area was carefully excised and replaced by a Krause flap.

CASE 12.—*Atrophic Scar.*—Mrs. W. B., aged 27, had incurred severe and extensive disfigurement at the hands of a self-styled dermatologist, who applied acid too freely, in July, 1904, for the removal of some facial moles. The deeply depressed cicatrices were extirpated Nov. 7, 1904.

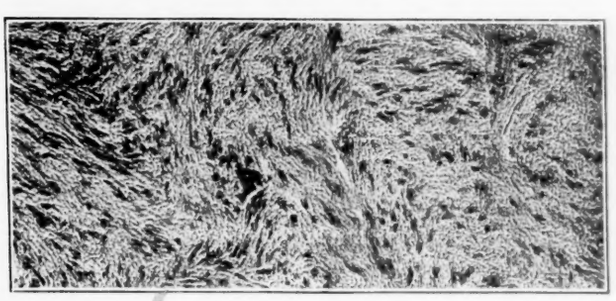


Fig. 4.—True keloid taken from Case 4.

CASE 13.—*Hypertrophic Scar.*—Mrs. D. C., white, aged 28, incurred a severe disfiguring hypertrophic cicatrix from the removal of a mole on right of the chin some two years prior to the extirpation, on June 6, 1907.

CASE 14.—*Atrophic Scar.*—Mr. H. C. D., aged 52, incurred a smooth, firm, hard cicatrix on the lower lip as a result of an application of arsenic paste for epithelioma some five years prior to the extirpation, which was made on July 11, 1906, to relieve a slight amount of cicatricial irritation.

CASE 15.—*Scleroderma.*—A man, aged 50, had multiple circumscribed patches of scleroderma, distributed over the trunk and extremities, of two years' duration.

CASE 16.—*Morphea.*—A young girl of 17 had a circumscribed patch of morphea, on the forehead, of six months' duration.

CASE 17.—*Macular Atrophia Cutis.*—An unmarried woman of 30 had white spot disease, situated around the base of the neck and upper aspect of the chest.

CASE 18.—*Striated Atrophia Cutis.*—A young man of 22 had striated atrophia cutis of several years' duration, abundantly distributed over trunk and extremities.

PRESERVATION OF PAPILLÆ

The clinical observation that many keloids develop from scar tissue, coupled with the fact that papillæ are prone to be destroyed and absent in a cicatrix, has led Kaposi,[3] Warren,[4] Langhans,[5] Joseph, Neumann,[6] Ravogli,[7] Schwimmer[8] and others to differentiate true and false keloid on this basis. Joseph maintains that this observation, original with Warren, must remain a fundamental distinction. Unfortunately, if the basis for this distinction were rational in character, it would fail to hold good for two obvious reasons. First, ordinary scar tissue need not be permanently devoid of papillæ; and, second, papillæ, even when originally present, are prone to disappear in any form of deep-seated new growth, from pressure or distention atrophy.

The papillæ were entirely preserved in Case 1 (false keloid), Cases 5, 6, 7, 8 and 9 (true keloid) and in Cases 11 and 13 (hypertrophic scar); they were absent in Case 4 (true keloid) and Case 12 (atrophic cicatrix).

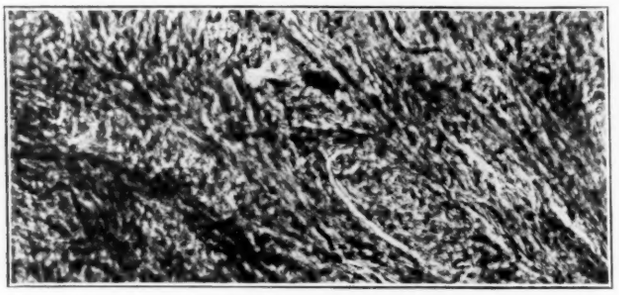


Fig. 5.—True keloid taken from Case 5.

Fig. 6.—True keloid taken from Case 6.

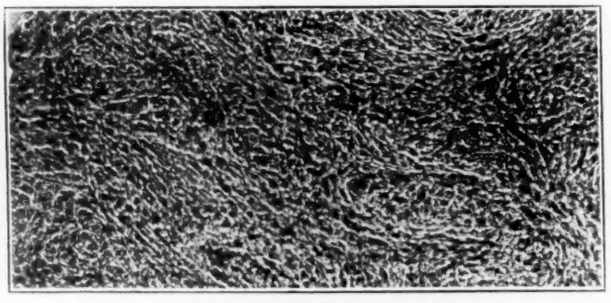


Fig. 7.—True keloid taken from Case 7.

Fig. 8.—True keloid taken from Case 8.

Papillæ were absent in Cases 2 and 3 (false keloid) over areas where the growth reached to and pressed closely on these structures and were normally preserved so long as they remained separated by a comparatively narrow margin of normal connective tissue.

ENCAPSULATION AND LOCATION

It is maintained that true keloid has a deeper origin (Kaposi, Schütz,[9] Goldmann,[10] Joseph and others) in contrast to the more superficial location and development of false keloid, and is surrounded and separated from the overlying papillæ by a well-defined capsule (Joseph and others) of normal connective tissue.

Cases of false keloid (Nos. 1 and 3) and true keloid (No. 4) had a superficial location, and were surrounded with a fairly well-marked capsule of connective tissue, whereas true keloids (Cases 5 and 8), with a similar location, were without a well-defined capsule. False keloid (Case 2) had a deep location and a well-defined capsule, and true keloids (Cases 6, 7 and 9), with a similar location, were devoid of capsules. True keloid (Case 8), as already stated, possessed a superficial location and no encapsulation. The lesion in this case, relatively the smallest in size and the one of shortest duration, was situated on the forearm. Serial sections were made and the point of origin, as nearly as could be determined, was the fibrous envelope of a hair follicle. The orifice of the follicle in question was preserved; the remainder possessed but a semblance of its former structure, and was encompassed by bundles of fibrocellular tissue which somewhat preserved in their primary distribution the general contour of the follicle and its obliterated sebaceous gland; innumerable smaller bundles branched from the sides of the structure, intertwined or curled on themselves, and extended laterally in all directions and in the main parallel to the surface of the skin.

PRESERVATION OF ELASTIC FIBERS

Much significance has at times been attributed to the presence or absence of elastic fibers in keloids. Their constant absence in keloid, and repeated presence in regenerated scar tissue, of sufficient standing, have induced some authors (Joseph, Meissner,[11] Kromeyer) to maintain that histologic differentiation is tenable on their presence or absence. Furthermore, the atrophic character of scar tissue has been attributed in a few instances to the restraining influence of elastic fibers, when present, and the hypertrophic character, when absent.

3. Kaposi: Arch. f. Dermat. u. Syph., xxxix, 11; xlii, 135.
4. Warren: Sitzungsb. d. Akad. d. Wissensch., Vienna, 1868, lvii, 401.
5. Langhans: Virchows Arch. f. path. Anat., 1867, xl, 332.
6. Neumann: Arch. f. Dermat. u. Syph., xxix, 123.
7. Ravogli, A.: Monatsh. f. prakt. Dermat., 1896, xxii, 624; A False or Cicatricial Keloid, THE JOURNAL A. M. A., 1904, xliii, 297.
8. Schwimmer: Arch. f. Dermat. u. Syph., 1880, xii, 225.
9. Schütz: Arch. f. Dermat. u. Syph., xxix, 25.
10. Goldmann: Monatsh. f. prakt. Dermat., xxxiii, 439.
11. Meissner: Dermat. Ztschr., iii, 182.

Elastic fibers were constantly absent except in Case 10 (simple fibroma) and Cases 15 and 16 (multiple patches of circumscribed scleroderma and morphea). They were present at the immediate confines of the growth in many instances, namely, Cases 3, 4, 7, 11, 13 and 17. In Case 9 (small true keloid of forearm) they were abundantly present between the growth and the epidermis. They were uniformly absent in true and false keloid, and in atrophic and hypertrophic scar tissue, irrespective of their duration and development. Their presence in Case 10 (simple fibroma) did not check the elevation and hypertrophic development of these lesions, which were slightly pedunculated, and their absence was constant in every atrophic cicatrix and lesion except in Case 10 (soft fibroma), already mentioned, and Cases 15 and 16 (multiple circumscribed scleroderma).

ARRANGEMENT AND DISTRIBUTION OF THE FIBROUS BUNDLES

It is maintained (Joseph, Warren, Kaposi, Berliner[12] and others) that in true keloid the dense bundles of fibrous tissue possess a more or less regular and systematic distribution, and are arranged in the main parallel to the surface of the epidermis. This arrangement was observed in only one case of true keloid (Case 4), and only as regards the lower strata of fibers. The arrangement, however, was observed in false keloid (Cases 2 and 3). In Case 2 the lower strata were irregularly interlaced; and in Case 3 masses of bundles were separated by fibrous septa. The interlaced character of the bundles, which is commonly attributed to false keloid, was manifest only in Case 1. A very irregular indefinite arrangement of the fibrous bundles, in which they curled on themselves and branched and crossed each other at random, occurred in Cases 5, 6, 7, 8 and 9 (true keloid). in Case 10 (simple fibroma) and Cases 15 and 16 (scleroderma). Bundles were evenly arranged and parallel to the surface of the epidermis in Cases 11 and 13 (hypertrophic scar) and in Cases 12 and 14 (ordinary irregular and depressed scars).

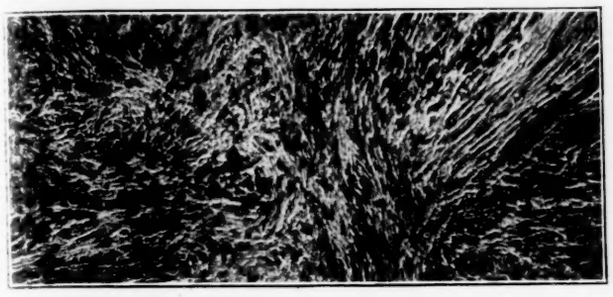


Fig. 9.—True keloid taken from Case 9.

FIBROCELLULAR CHARACTER

It is sometimes maintained (notably by Babes[13] and Joseph) that true keloid can often be histologically differentiated from false by its more cellular character, the shortness of its fibers, which are frequently reduced in length to mere spindles, the relatively larger nuclei, and by the presence of endothelial cells and remnants of partially obliterated blood vessels. It is conceded that there are marked variations between the extremes in both classes; that the variation in cellular and fibrous character depends, to some extent, on the duration of the process; the more recent the process the richer its cellular character. These are the chief points which are embraced in this histopathologic differentiation. All the specimens were similarly prepared and stained, and the most characteristic area of each was photographed under the same magnification. The photographic records confirmed the theory that a histologic cellular differentiation was quite impossible. False keloids (Cases 1 and 2) were rich in cells, with large oval distinct nuclei and rather short well-defined spindles; the same structure was approximated in the ordinary scar following the removal of a mole, in Case 13, and in true keloids (Cases 7, 8 and 9). In false keloid (Case 3) the structure was almost purely fibrous in character. The structure was almost purely fibrous in the remaining cases of true keloid, with a somewhat varying predominance of interspersed spindle-shaped cells, with small and indistinct nuclei. True keloid (Cases 4, 5, 7, 8 and 9) showed a somewhat more cellular and in Case 6 an almost pure fibrous structure. An absolute differentiation of false from true was not possible and a deceptive similarity of structure attained in all the cases of true and false keloid, and hypertrophic and simple scar. Hypertrophic scar (Case 11) and ordinary scar tissue (Case 13) were purely fibrous or almost purely fibrous in structure. The case of ordinary scar following application of arsenic paste was rather cellular in type. The duration and long standing of the process seemed to exercise little influence in determining the cellular or fibrous character of a lesion, cases of five to twelve years' or longer duration, being often more cellular in type than similar lesions of relative short (months) duration.

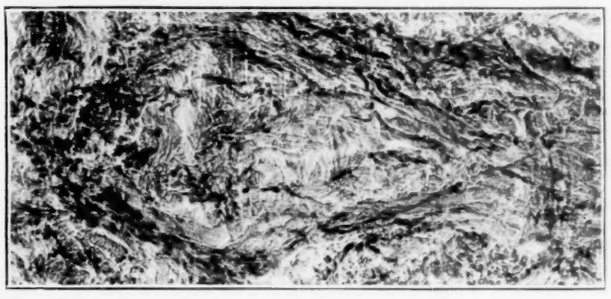


Fig. 17.—Simple fibroma.

In only two instances (Cases 15 and 16, scleroderma) did the fibrous tissue approximate normal collagenous connective tissue in structure and appearance, and assumed its peculiar undulating and wavy character. Normal connective tissue in its characteristic state was abundantly present at the confines of most of the lesions examined. The lesions in white spot disease and striæ atrophicæ were wavy and undulating in appearance, but failed to show the peculiar reticulated network of interlacing fibrils constantly manifest in normal connective tissue, and which stamps it with an unmistakable and characteristic histologic individuality.

PRESERVATION OF HAIR FOLLICLES, SWEAT AND SEBACEOUS GLANDS

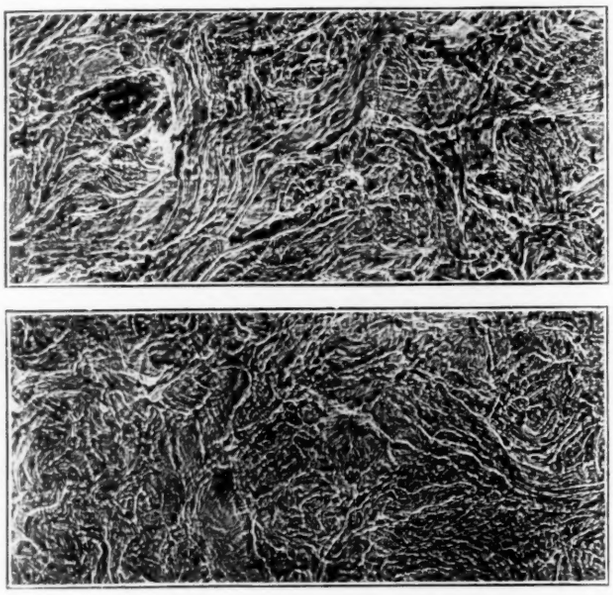
Hair follicles undergoing obliteration were observed in only two cases (Nos. 6 and 8). Both were small spontaneous keloids of relatively short duration. Sweat glands in a fair state of preservation were found in Case 10 (soft simple fibroma). Normal or almost normal hair follicles were found conserved in close proximity to the growths, in false keloid (Cases 1 and 3) and spontaneous keloid (Cases 6 and 7); sebaceous

12. Berliner: Monatsh. f. prakt. Dermat., 1902, xxxiv, 321.
13. Babes: Arch. f. Dermat. u. Syph., 1880, xii, 237.

glands in proximity to false keloid (Case 1); and sweat glands in proximity to false keloid (Cases 1 and 3), and spontaneous keloid (Case 6). In false keloid (Case 1) sweat glands were normally preserved below the keloid.

EXTENSION ALONG BLOOD VESSELS

The careful study and examination could in nowise confirm the original and amply affirmed observation of Warren (Collins, Unna,[14] Kaposi, Joseph, Neuermann, Crocker,[15] Freund[16] and others), that the extension of keloid can be readily traced along the course of the adjacent blood vessels, and that the latter were pathologically altered and surrounded with plastic exudate for some distance from the pathologic area. Nearly all the specimens showed vascular congestion and round-cell infiltration about the smaller capillaries, but not more than one would reasonably expect to encounter in any pathologic process of similar character and proportions. Some thin-walled, newly formed capillaries were observed in



Figs. 18 and 19.—Ordinary collagenous connective tissue in the neighborhood of two cases of keloid.

the body of many of the growths, but other vascular changes appeared to be purely inflammatory and secondary in character, due to direct involvement and extension on the part of the growth, and not *vice versa*. Growth and extension seemed to occur by reduplication and multiplication of the pathologic cell, and mitosis and cell division and transition to fibrous tissue was a matter of common observation. The early and marked involvement of hair follicles in several cases, and the apparent development of the small spontaneous lesion in Case 8, as observed from serial sections, have led me to believe that the fibrous envelope of glandular elements is a more probable cause than the fibrous coats of blood vessels. This is also in a measure strengthened by a confirmation of Thorn's observation[17] that keloid is free from involuntary muscular fiber. The tendency for keloid to become self-limited in its clinical growth, and not to involve the deeper subcutaneous structures, also speaks strongly against a vascular origin and an extension along blood vessels. The involvement of blood vessels seems to be not a primary process, but a secondary one due to the direct independent extension of the body of the growth proper. In this way the blood vessels become invaded and involved, in the same manner as the hair follicles, sudoriferous and sebaceous glands and other specialized structures of the skin.

14. Unna: Histopathologie, 1894.
15. Crocker: Brit. Med. Jour., Sept. 18, 1886.
16. Freund: Arch. f. Dermat. u. Syph. (Festschr. Kaposi), 1900.
17. Thorn: Arch. f. klin. Chir., 1896, li, 619.

SUMMARY

Briefly recapitulated and summarized, the essential observations gleaned from the histologic study of the enumerated cases are as follows:

1. The preservation of the papillæ does not differentiate true or spontaneous keloid from false keloid or from hypertrophic and atrophic scar tissue. They were found absent in spontaneous keloid and preserved in false keloid and found regenerated in cicatricial tissue. In this respect the claims of Kaposi, Warren, Joseph, Ravogli, and others are refuted.

2. A deep location does not differentiate true keloid from false. Three out of six cases of true or spontaneous keloid possessed a superficial location; and one case out of three of false keloid had a deep location. The claims of Kaposi, Joseph, Schütz and Goldmann are in this respect refuted.

3. Preservation of the capsule was not indicative of true keloid; most of the cases of spontaneous keloid were devoid of well-defined capsules, and all of the false cases possessed fairly well-defined capsules.

4. Absence of elastic fibers does not differentiate true keloid from false, or either of these from cicatricial tissue. It was found uniformly absent in all of these structures. Its absence does not serve to differentiate keloids from fibromata in general if a soft simple fibroma comes into that category. Elastic fibers were also found preserved in the fibrous structures of two cases of scleroderma. I share the views of Tschlenow as opposed to those of Joseph, Kromeyer, Meissner and others on the futility of this histologic differentiation. No regeneration of elastic fibers in scar tissue was observed in any of the cases.

5. The absence of elastic fibers is not an etiologic factor in the hypertrophic character of keloid as maintained by Ravogli and Goldmann. Their absence was noted in the depressed lesions of striated and macular atrophy and depressed cicatrices, and their presence in a simple soft fibroma did not inhibit the hypertrophic character of the gross lesion.

6. The contention of Warren, Kaposi, Joseph and Berliner, that the fibrous bundles of true keloid preserve in the main a longitudinal arrangement, parallel to each other and to the surface of the skin, in contradistinction to the interlaced character of false keloid, is controverted in five out of six cases of spontaneous keloid, and in two out of three cases of false keloid. The interlaced character was observed in simple soft fibroma and scleroderma, and the parallel arrangement was observed in ordinary scar tissue.

7. A differentiation of true from false keloid, and the former from hypertrophic and atrophic scar tissue, as maintained by Dieberg,[18] Kaposi, Schimmer, Joseph and others, was not tenable. Joseph's contention that old keloid is more fibrous and new keloid more cellular could not be confirmed. A deceptive non-differentiable similarity of structure obtained in true and false keloid, and hypertrophic and simple scar tissue. All these structures could be easily differentiated histologically from normal collagenous connective tissue, which was present in close proximity to the majority of the examined lesions.

18. Dieberg: Deutsch. Klinik, 1852, No. 33.

8. A deceptive similarity in histologic structure exists between scleroderma and normal collagenous connective tissue.

9. The differentiation of true from false keloid by the preservation of hair follicles and glands, which are neither pushed aside nor subject of pressure atrophy (Volkmann,[19] Joseph and others) was negated. The relatively few glands which were encountered occurred in equal measure in false and true keloid, and were pushed aside and subject to atrophic changes.

10. No origin could be traced to the adventitia or primary extension along the blood vessels of the corium, as maintained by Collins, Joseph, Unna, Kaposi, Neumann, Crocker, Wilms,[20] Dénériaz,[21] Freund and others, and denied by Thorn and Reiss.[22] The apparent origin in one case from a hair follicle, and the marked and prompt involvement of the glandular structures leads me to share the views of Berliner and Kirsch,[23] of the probable origin of keloid from these structures.

11. There seems to be as little basis for the assumption that trauma must play the causative rôle in every case of keloid (Jadassohn,[24] Schütz, Tschlenow, Besnier,[25] Barthelemy Hutchinson,[26] Unna and others) as that of attempting a successful histologic differentiation on the same grounds (Kaposi, Warren, Langhaus, Ravogli, Neumann, Schwimmer, Joseph and others). An idiopathic or spontaneous etiology must be conceded to some of the cases of keloid, as long as these terms find a general acceptance for other affections.

12. A differentiation of true and false keloid is not possible on clinical or histologic grounds; the differentiation of keloid in general from scar tissue is not possible on histologic grounds. Keloid and scar tissue can be histologically differentiated from normal collagenous connective tissue.

19 West Seventh street.

NOTE.—In addition to the authorities cited above, the following may be consulted:

Herzog, Maximilian: Extensive Multiple Keloids, THE JOURNAL A. M. A., 1907, xlviii, 1844.
Kohn (Kaposi): Wien Med. Wchnschr., 1871, Nos. 24-26.
Roger: Brit. Med. Jour., 1884, p. 667.
Soffiantini: Gior. ital. d. mal. ven. e. d. pelle, 1893.
Fischer: Ein Beitrag zur Kentniss des Keloids, Monograph, Munich, 1889.
Welander: Nord Med. Arch., 1893, iii, 14.

ABSTRACT OF DISCUSSION

DR. W. A. PUSEY, Chicago: It was grateful to my desire to see generalizations in our groups of dermatoses, to hear the opinion expressed by Dr. Heidingsfeld that there is no essential difference histologically between hypertrophic scars and keloid; that is in the interest of simplification and decidedly in the direction that we hope dermatology will go. I am strongly of the opinion that there is no essential difference between hypertrophic scars and keloids, the difference being one simply of degree.

DR. MAXIMILIAN HERZOG, Chicago: About two years ago I published the report of cases of multiple keloid in Chinamen who were addicted to the morphin habit. I also at that time expressed the opinion that there was no essential difference between the so-called idiopathic and the acquired or traumatic keloid. In the cases I reported, the keloidal growths all followed the slight traumatism inflicted by the puncture of the hypodermic needle. Histologically, it is impossible to differentiate sections from the so-called idiopathic and from traumatic keloids. I can therefore fully subscribe to the opinion expressed by Dr. Heidingsfeld in his paper.

19. Volkmann: Arch. f. klin. Chir. (Langenbeck's), 1872, xiii, 394.
20. Wilms: Beitr. z. klin. Chir., xxiii, No. 1.
21. Dénériaz: Etude sur la chéloide, Monograph, Paris, 1887.
22. Reiss: Arch. f. Dermat. u. Syph., lvi, 325.
23. Kirsch: Arch. f. Dermat. u. Syph., 1906, lxxviii, 255.
24. Jadassohn: Centralbl. f. Chir., 1896, No. 50.
25. Besnier and Doyon: Transl. Kaposi's Text-Book of Skin Diseases (annotations).
26. Hutchinson: Medical Times, May, 1885.

PERSISTENT THORACIC SINUS FOLLOWING EMPYEMA

A REPORT OF FIFTEEN CASES TREATED BY DECORTICATION OF LUNG AND THORACOPLASTY *

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The persistent sinuses which occasionally follow pyothorax have long brought annoyance and perplexity to surgeons and ill health and disappointment to patients. Thoracoplasty has usually been tried for their relief, with varying degrees of success, and since Fowler[1] in 1893 and De Lorme[2] three months later, dissected away

Figs. 1 and 2.—Extreme deformity following lung collapse of two years' duration, Case 11.

the constricting pulmonary pleura their operation of "lung decortication" has attracted considerable attention. This operation has become rather more firmly established on the continent of Europe than here and has been used by many surgeons. Bergeat[3] has recently made a very complete report of the subject from Dr. Sick's clinic in Hamburg, where the Schede operation was first elaborated: lung decortication was here done seven times in the treatment of twenty-one cases of persistent empyema, and it was done more commonly

Figs. 3 and 4.—From photographs taken six weeks after an operation for relief of deformity from pyothorax, Case 13. The extreme lung compression was the result of an empyema of two months' duration. The extreme chest contraction followed the failure of the lung to expand.

in the later than in the earlier cases. It was always done in conjunction with more or less resection of the chest wall and its value is appreciated. Jordan,[4] Kurpjurorit[5] and Bayer[6] may be mentioned among the others

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Fowler: N. Y. Med. Rec., Dec. 30, 1893.
2. De Lorme: Gaz. d. hôpitaux, 1894, No. 11.
3. Bergeat: Beitr. z. klin. Chir. (Bruns'), lvii, 373.
4. Jordan: Beitr. z. klin. Chir. (Bruns'), xxxiv, 554.
5. Kurpjurorit: Beitr. z. klin. Chir. (Bruns'), xxxiii, 79.
6. Bayer: Centralbl. Chir., 1908, No. 1.

who advocate the method. Many French surgeons have advocated the procedure since the publication of De Lorme's classical article.

A review of the American surgical literature of the last ten years shows fewer contributions to the subject than one would expect, although Ransohoff[7] has contributed a very practical method of liberating the pulmonary pleura, and Ferguson[8] has recorded seven cases in which he dissected away the sinus walls.

CASES ON WHICH THIS REPORT IS BASED

Within the last nine years I have employed the procedure coupled with thoracoplasty in fifteen cases, all but one of them in St. Mary's Free Hospital for Children. The average age of the St. Mary's Hospital patients was

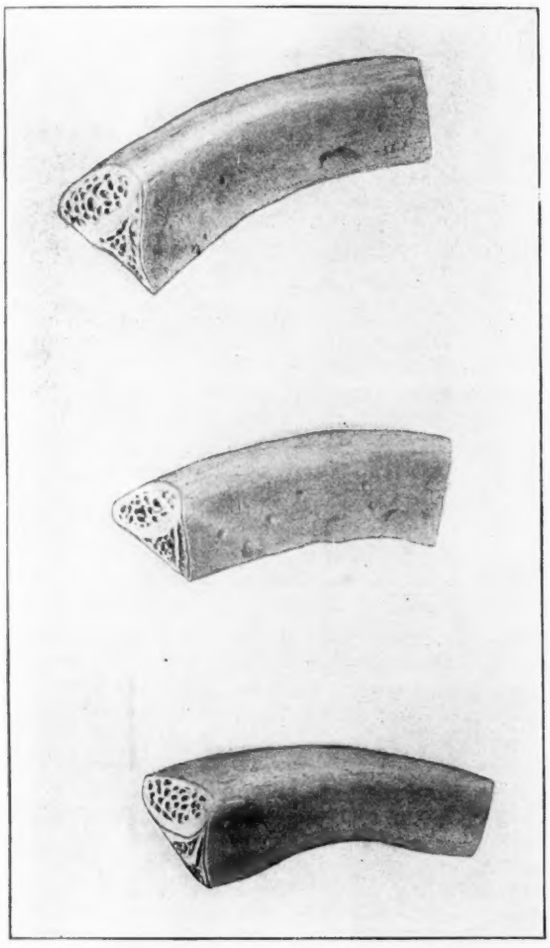


Fig. 5.—Rib compression and formation of new bone on inner surface of rib, due to Nature's effort to bring the chest-wall into apposition with the collapsed lung, Case 13.

5½ years; the fifteenth patient was an adult. In seven of these patients the primary empyema operation had been done elsewhere. The remaining eight persistent sinuses occurred among a total of 186 cases of empyema, thus indicating an expectation of about 4 per cent. of such sinuses in the empyema cases as they are referred to us in New York. The average lapse of time between the primary opening of the chest and the secondary lung decortication and thoracoplasty was fifteen months.

TYPE OF CASES SUITABLE FOR OPERATION

It has not always been easy to determine when an operation should be advised for an unhealed pyothorax. Sinuses which are accompanied by little deformity or suppuration may be treated for long periods without operation and will frequently close and leave very good lung function. Ochsner's recent report[9] of fourteen such cases treated by the aid of Beck's bismuth paste is very instructive, and his results are most satisfactory. In the selection of cases suitable for such treatment one may well remember the possibility of bismuth remaining as a foreign body within the chest cavity and follow Ochsner's example in applying the method only to cases with well formed sinuses.

On the other hand, sinuses which are coupled with excessive deformity and disturbing suppuration should be treated by operation while there is still a possibility of obtaining lung expansion; delay for them may be disastrous. Failure of lung expansion gives the key to the situation.

CHANGES WHICH ACCOMPANY PERSISTENT LUNG COLLAPSE

When the lungs fail to expand a distressing deformity results. Nature apparently abhors an empty chest. Figures 1 and 2 depict an extreme instance of this deformity; it occurred during the two years' non-operative

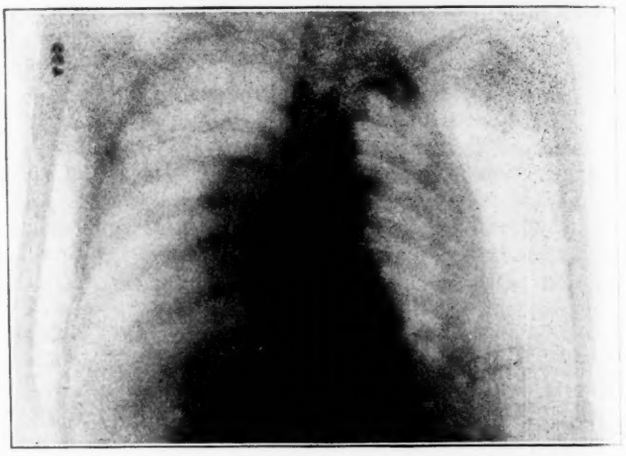


Fig. 6.—Radiograph showing the chest contraction and lateral spinal curvature in Case 13.

treatment of a persistent empyema sinus. The original empyema operation had consisted of the removal of a short piece of the eighth rib in the posterior axillary line. The deformity shown in Figures 3 and 4 occurred within six weeks after a similar operation for extreme, neglected pyothorax.

The changes in these cases may be summarized as follows:

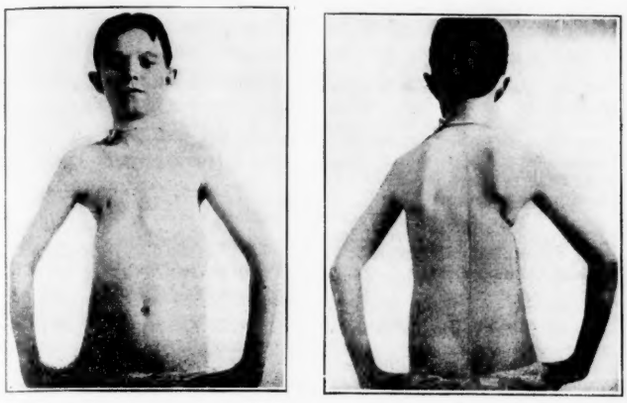
1. Position of shrunken lung is against the mediastinum in the upper part of the chest.
2. There is lateral curvature of spine with concavity toward the affected side.
3. There is crowding of ribs on each other, so that the intercostal spaces are obliterated, their vertical diameters are lessened, and a new deposit of bone is found on their inner sides (Fig. 5).
4. There is bulging of diaphragm into the chest and against the lower ribs, the apposition sometimes including the sixth rib.
5. There is formation of firm exudate, which becomes so incorporated with the pleura that it seems like a pleural thickening. This is much thicker on the costal than on the pulmonary pleura.

7. Ransohoff: Ann. Surg., April, 1906.
8. Ferguson: Tr. Am. Surg. Assn., 1909.
9. Ochsner: Ann. Surg., July, 1909, p. 151.

6. There is formation of a firm walled sinus which leads from the opening in the chest wall to the apex of the pleural cavity, usually about large enough to hold one finger and sometimes much larger.

METHOD OF OPERATION

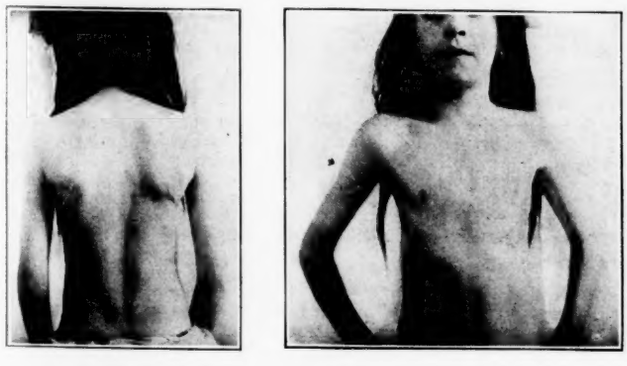
Ether anesthesia was used, the patient lying on the sound side. "Orientation" incision was made about the sinus opening, with resection of 3 or 4 inches of the rib above and the one below it, thus learning the size



Figs. 7 and 8.—Result in Case 13, two years after operation.

and direction of the sinus. The incision was then carried upward, usually in the anterior axillary line to the third rib. The ribs were divided and suitable portions removed, usually ½ inch from the second or third, 4 to 6 inches from the tenth, and corresponding pieces from the intermediate ones. Sometimes much less was taken away.

With suitable retraction an excellent view of the sinus is thus obtained. A longitudinal incision is then made through the upper part of the sinus wall until the lung is reached. At this stage of the procedure the patient is allowed so nearly to emerge from the anesthesia that he will cough, when the lung usually bulges into the inci-



Figs. 9 and 10.—Result in Case 9, four and a half years after operation.

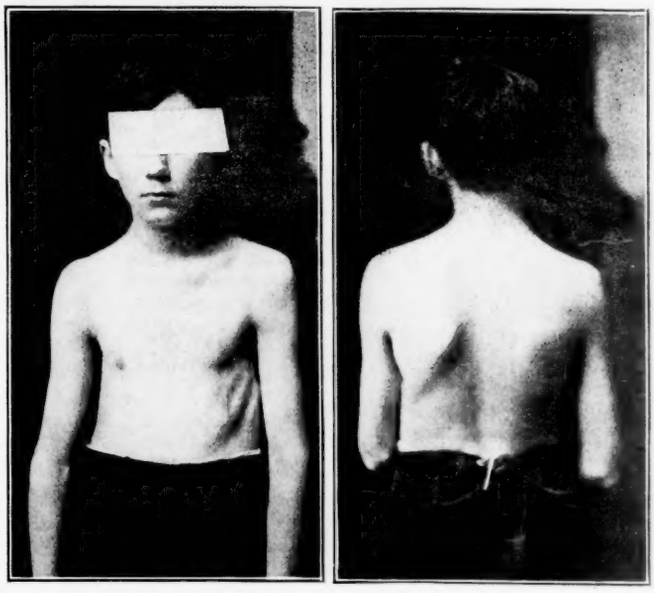
sion. The membrane is then separated from its surface over as large an area as is practicable and removed. In most of these cases a strip 2 or 3 inches long and from 1 to 2½ inches wide has been removed. This represents somewhat more than the pulmonary portion of the sinus lining. The chest wall was nearly brought together by strong sutures and a drain or suction tube inserted in the unclosed part.

VARIATIONS

The amount of chest wall which was removed differed materially in the various cases and was dependent on the likelihood of gaining lung expansion. In one of the cases so little was resected that the operation could hardly be called thoracoplasty, and the lung expanded so as to fill the chest. The degree of chest-wall resection is indicated in some of the accompanying illustrations, which show the final results. In three of the cases in which additional operations were necessary, the lung was found collapsed against the mediastinum and could not be made to expand; it looked dark and spongy and had none of the pinkish inflated appearance which had been noted in other cases. On incising it, air whistled through it, but it showed no tendency to expand. For such cases Ferguson dissects away the fibrous lining of the apex and side walls of the sinus, for the purpose of obtaining an extensive surface for the production of new granulation.

AFTER-TREATMENT

Persistent and continued blowing on James' (or Wolf's) bottles has been used in every case. Negative pressure by means of Cotton's and other apparatus has



Figs. 11 and 12.—Result in Case 1, nine years after operation.

been used in two cases. The pneumatic cabinet has not been used.

Judging from the appearance of the lung when the patient coughs, the writer believes that the expansive power which accompanies forcible blowing is very great; greater than is obtained from the other measures. Early and continued physical exercise is encouraged.

RESULTS

The results of this procedure are very encouraging. Twelve of the fifteen patients are in excellent health at the time of this report, or at the last observation; from a few months to nine years after operation, with varying degrees of chest expansion and chest capacity, and without lateral curvature of the spine. One of these twelve has a small sinus, but this sinus causes so little disturbance that he is unwilling to have anything done for it. One patient having a healed chest and nearly erect carriage lived seven years after the operation and then died of "dropsy." One patient has died of tuberculosis. One patient died a few days after her operation. This was the only operative death in the series and occurred in the patient whose excessive deformity is shown in Figures 1 and 2. She was taken from the

TABULATED ABSTRACTS OF CASE HISTORIES

No.	Age.	Hosp. No.	Side.	Date of primary operation for empyema.	Date of operation for lung constriction, and deformed chest wall.	Date of discharge from hospital.	Remarks.	Results.
1	5	102	L	2/ 8/1900	5/23/1900	7/30/1900	The primary lung compression was excessive; the pus having perforated the chest wall.	Examined March 10, 1909; erect, in good health; a champion tennis player in Van Cortlandt Park; circumference of right side of chest 2 inches less than left; good respiratory power.
2	4	B100	R	8/14/1900	10/25/1900	.....	Lung expansion at operation unsatisfactory. Tuberculosis present.	Died Dec. 9, 1900, from tuberculosis.
3	8	C34	L	10/../1897	11/15/1900	2/25/1901	Case complicated by tuberculosis in pleura and axilla. Two operations had been done between October, 1897 and November, 1900. Small sinus persisted till March, 1902 and then healed firmly.	Seen March, 1909; in good health; erect carriage; circumference of left side of chest 1¾ inches less than right; good respiratory murmur.
4	7	287 888	L	4/../1900?	4/19/1901 5/ 8/1903	10/ 2/1901 6/23/1903	At both operations very great lung compression. Worse at second than at first.	Enjoyed good health, with chest healed and nearly erect carriage till 1908, then died of "dropsy."
5	4	909	L	1901	5/ 8/1903	7/25/1903	Lung did not expand well after decortication but sinus healed.	Reported in good health summer 1908.
6	3	1054 1209	L	12/17/1902	4/17/1903 1/ 4/1904	9/16/1903 1/31/1904	Extreme collapse of lung found at both operations. Good healing obtained.	Seen January 1905 and picture taken; erect and in good health; considerable contraction in left side of chest; good respiratory murmur; sinus firmly healed.
7	28	9988*	L	1899	6/11/1903	7/ 4/1903	Extreme lung collapse. Capacity of chest cavity about 0iii. Lung dark red and showed no tendency to expand.	Letter March, 1909, states "in best of health" working hard and eating and sleeping well; small sinus still present.
8	5	988 1311	L	12/ 4/1902	2/19/1904 2/27/1905	9/15/1904 3/30/1905	Was in country branch of the hospital between the two operations in good health but with small sinus.	May, 1909, in excellent health; erect carriage; sinus healed.
9	6	1529	R	3/21/1904	6/ 3/1904	8/ 4/1904	Sinus large enough to hold two fingers healed promptly. (Within two months.)	Examined Dec. 5, 1908; good health; erect; circumference of left side of chest 1¾ inches less than right; good respiratory murmur and good mobility.
10	6	305 1617	R	9/20/1901	7/ 1/1904	9/15/1904	Diaphragm at about the level of 5th rib. Lung much contracted. Prompt healing after decortication.	Seen winter 1905; in good health; erect.
11	8	1677	R	9/../1902	9/23/1904	9/25/1904	Extreme deformity—see Fig. 1. Lung about 1/6 its normal capacity.	Child removed from hospital by parents and died a few days later.
12	4	3472	R	1/../1907	4/ 5/1907 6/10/1907	7/ 9/1907	Lung extremely collapsed; found with difficulty; expanded after decortication when child coughed.	Seen December, 1908; well nourished; strong; erect; circumference of right chest 1¼ inch less than left; good respiratory murmur; a little later a small sinus opened which healed after operation.
13	12	3587 4739	R	4/ 2/1907	5/16/1907 9/19/1908	8/20/1907 10/10/1908	Empyema of two months' standing before chest first opened; lung could not be felt by finger in chest cavity. Rapidly progressing deformity at time of first decortication; see Fig. 3. Prompt healing, but sinus opened just before second decortication and then healed again.	March 10, 1909; circumference of right side of chest 3½ inches less than left; good respiratory murmur; is erect and in good health; see Figs. 7 and 8.
14	6	4556	R	6/ 2/1908	9/11/1908 3/26/1909	12/20/1908 6/12/1909	Lung extremely collapsed but bulged well on coughing; sinus persisted; another operation followed by good healing.	Report Aug. 1, 1909; good condition; sinus healed.
15	4	5549	R	11/20/1908	2/23/1909	4/14/1909	Lung expanded so well on coughing that ribs were fastened together with hardly any resection.	June 5, 1909; in good condition; erect; good respiratory murmur.

* General Memorial Hospital

hospital by her parents two days after her operation, while doing reasonably well, and died a few days later in her insanitary tenement surroundings.

PROPHYLAXIS

Prompt relief of pyothorax before lung compression takes place is the best way of preventing persistent sinuses. When a chest is opened for empyema an inch and a half of the eighth rib may be removed in the posterior axillary line. The finger may be inserted to remove coagula and to determine the position of the lung. The lung will usually expand at this time if the anesthesia is withdrawn and the patient allowed to cough. If the lung does not expand, adhesions may be very carefully started with the finger.

In the after-treatment, blowing exercises and suction apparatus and active physical exercise are desirable.

SUMMARY

So far as deductions can be drawn from this group of cases, they indicate the following:

1. Persistent thoracic sinus can be cured by decortication of lung and resection of the chest wall in 80 to 90 per cent. of the cases.
2. After operation the patient will not have lateral curvature of the spine.
3. The lung capacity on the affected side will remain much diminished.
4. Nearly all the patients are in good health and are not materially inconvenienced by this restricted lung capacity.
5. The mortality from the operation is probably more than 5 per cent. and less than 10 per cent.

ABSTRACT OF DISCUSSION

Dr. Emil G. Beck, Chicago: Resection of the chest wall for suppurative old sinuses should be reserved for old cases in which all other treatment has failed, as it is a procedure which will cause great deformity. A report from Dr. Ochsner of Chicago was presented before the American Surgical Association recently on fourteen patients who were treated with 33 per cent. bismuth-vaselin paste. Twelve of these sinuses are healed and 2 are much improved. Of my own patients, 13 sinuses were treated with this paste and 11 are closed, 1 patient is continuing the treatment, and 1 died. The latter had first been operated on unsuccessfully, then received this treatment, which also had no effect, and then was operated on again and died shortly after this operation. By this very simple procedure, without risk to the patient, 80 per cent. of these patients can be cured without operation. There is, however, danger of bismuth poisoning, which may be obviated if the physician will watch the cases. I have had but one case in which I saw distinct symptoms of bismuth poisoning and in that case I prevented further absorption by dissolving the paste with warm olive oil and then removing the bismuth. I have also tried as a prophylactic method the injection of a 5 per cent. bismuth-vaselin paste and all the sinuses closed without fever within ten days.

Dr. C. G. Kerley, New York: If there are any other means that would give better results than the methods suggested by Dr. Dowd, I will be glad to know of them. I have used the Bier method and seen it employed in several cases, without any striking results. Vaccine therapy has been used during the past year or two, usually with indifferent results. I have not had much success with the James bottle. It is looked on as a toy. The child will blow vigorously for a few days and then it is difficult to make him use it further. I have had much better results in expanding the lung in the use of different forms of exercise. One of these is carried on by putting a towel around the sound side of the chest, tying the towel or bandage to some stable object, and allowing the child to rest his weight in the towel, thus compressing the sound lung, at the same time breathing deeply in order to bring the diseased lung into action. Giving the child three exercise periods daily of ten minutes each has been followed by surprising success in my cases. Later, any exercise that will make the child breathe deeply is to be advocated.

Dr. Linnaeus E. LaFetra, New York: I have had the same experience with the blow bottle that others report; but there has been devised within the last year or two a little toy pipe with a rubber bag attached at the bowl to imitate a soap bubble. Children take much pleasure in blowing up these rubber bubbles to see how large they can be made. Other rubber bags are made in the form of animals, and much exercise results from using such devices. In the last three years I have seen two of the cases described by Dr. Dowd in which the results are most satisfactory. The lung will expand during the operation when the child coughs or makes a forced expiration.

Dr. Abraham Jacobi, New York: I have had the same difficulties in dealing with fistulas that have been described. The bismuth paste may probably fill up many of these fistulas. I have had fistulas up to eleven inches in length to deal with and I have had to operate after injections of tincture of iodin had failed. I have relied on iodin and it always failed. In the common run of empyema cases no one would think of employing this method, but in bad cases, in which adhesions are great, what would this operation and positive pressure do?

Dr. C. N. Dowd, New York: In my paper I incorporated references to his work and the results of Dr. Ochsner's treatment, and stated there that this method is to be tried before operation is resorted to. One may, however, select the cases in which it is to be used. When used in unsuitable cases, the bismuth has sometimes remained in the chest as a foreign body and has helped to keep the sinus open. When Dr. Beck's method and other methods fail, when the spinal curvature is increasing or has already reached an extreme degree, when expansion of the lung is prevented by its firm fibrous envelope and when the chest contraction is excessive, we have the suitable condition for the operation which I have described, and in certain instances of steadily progressing deformity it may be used before this full deformity has been reached. In the cases here reported, the average lapse of time between the primary empyema operations and the lung decortication was fifteen months—too long a time.

The method has been spoken of as producing deformity. It should, however, be referred to as preventing deformity and restoring the erect posture. The greatest deformity comes from Nature's effort to bring the chest wall into opposition with a collapsed lung. After thoracoplasty and lung decortication the erect posture is regained. This has been noted for years after the Schede operation.

Some form of negative pressure has been used in several of these cases. It can be maintained satisfactorily, but its results have been disappointing. That positive pressure is effective is shown by having the patient so lightly narcotized that he will cough and expand the lung at the time of the primary operation and later the toys to which Dr. Kerley has referred and the blow bottles are very useful. The special field of the pneumatic cabinet seems to be in other conditions than empyema. The increased pressure which is ordinarily used is not greater than the difference between the atmospheric pressure in the lower and upper floors of a high building and this is not sufficient to overcome the adhesions of a confined lung—not so great as the coughing or toys or bottles give. I know of one fatality which occurred in its use which would probably not have occurred had the anesthetist been in satisfactory communication with the operator.

Care of Children.—In education and religion, and in the principles of good citizenship, the child is the key to the problem. If we are to have literary men and women we must begin with children. By far a large majority of those noted for their strength of character have formed that character before 16 years of age. The best citizens are those who have instilled into their minds the principles of good citizenship during childhood.—Marion Hull, in *Annals of Medical Practice.*

Clinical Notes

CEREBROSPINAL SYPHILIS CAUSING INTERNAL HYDROCEPHALUS AND SYMPTOMS OF CEREBELLAR TUMOR

REPORT OF A CASE WITH NECROPSY FINDINGS *

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Instructor in Neurology, Medico-Chirurgical College; Assistant Neurologist to the Philadelphia General and the Medico-Chirurgical Hospitals

PHILADELPHIA

The following case, studied in Dr. T. H. Weisenburg's wards of the Philadelphia General Hospital, is of considerable interest for several reasons. Although cerebral syphilis frequently causes symptoms of brain tumor, it generally does so by the formation of gummata in relation with the meninges or vessels, and not, as in this case, by occlusion of the foramen of Magendie and resulting chronic internal hydrocephalus. The comparatively frequent occurrence of congenital internal hydrocephalus in association with congenital syphilis has often been noted. The pathology of congenital hydrocephalus is not well established, but occlusion of the foramina of communication between the ventricular system and the subdural space of the brain has been found postmortem by various observers, and appears to be the cause of the condition in at least some of the cases.

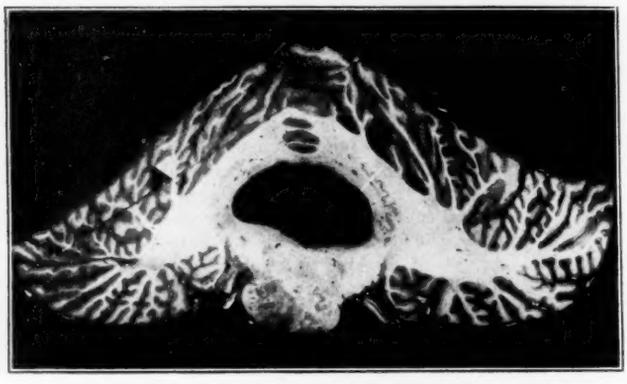


Fig. 1.—Stained section of the cerebellum and medulla showing the degree of the dilatation of the fourth ventricle, and the displacement and compression of the dentate nuclei.

Acquired, or secondary, hydrocephalus has been found in numerous cases to be due to mechanical obstruction of the foramen of Magendie or aqueduct of Sylvius by tumors, cysticerci, or as a result of tuberculous, suppurative or epidemic meningitis. Syphilitic meningitis, however, acting in this manner, seems to be a rare condition. Nonne ("Syphilis and Nervensystem") does not mention it, and in several text-books (Gowers, Oppenheim, Strümpell, Church and Peterson) consulted, syphilis was either entirely omitted or only vaguely suggested as a possible cause of acquired hydrocephalus.

The second point of particular interest in this case was the character of the cerebellar incoordination. During the period of his stay in the hospital (about four weeks), and no doubt for some time before his admission, the disequilibration became progressively worse, and from the first to the last was characterized by a constant tendency to fall directly backward, never to the right nor left. Physiologic experiments on animals (cited by Morat) teach us that destruction of the vermis, or bilateral destruction of the cerebellar hemispheres, will cause forcible extension of the head, opisthotonos, anteroposterior movements of oscillation, etc. Unilateral lesions of the cerebellum or its peduncles produce turning movements of various kinds and degrees, and in coordination on the same side of the body. Clinical experience confirms these experiments, but movements directly backward are very seldom observed, probably because central lesions of the vermis, and exactly symmetrical lesions of the cerebellar hemispheres, rarely occur. The incoordination in this case, together with other signs of intracranial neoplasm, led to a diagnosis of a tumor of the vermis.

History.—C. R., white, aged 42, was a salesman by occupation. Nothing of importance was elicited in the family history. He had a chancre at the age of 24, but gave no history suggestive of secondary or tertiary syphilis. He stated that he had not been well for two or three years, had had some difficulty in walking, pains from time to time in the arms and legs, headache rather frequently, and some difficulty with micturition, principally when beginning to urinate. His hearing had been somewhat impaired during the last year. His sister stated that he had been mentally dull for five or six years, and had had occasional attacks of nausea and vomiting, vertigo, and sometimes fainting.

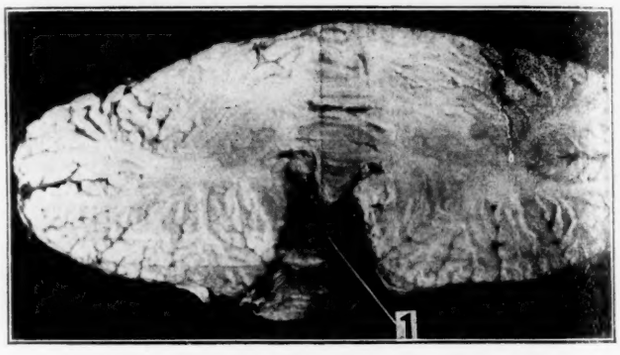


Fig. 2.—Part of the cerebellum removed showing site of the occluded foramen of Magendie (1) externally.

Examination.—He was able to walk at the time of his admission to the hospital, Aug. 30, 1908, when his condition was as follows: He was muscularly well-developed and nourished, and presented no gross motor paralysis, muscular atrophy nor cutaneous sensory loss. The pupils showed some inequality and irregularity of outline, but both reacted to light and to ocular movements. The fundi presented no pathologic changes, and there was no nystagmus. The actions of the motor cranial nerves were normal. In the upper extremities the muscular power was good, and there was no ataxia in the finger to nose test. All of the reflexes, however, were more prompt than normal. In the legs the power was also good, no ataxia was present (heel to knee test), the knee jerks were increased, especially the left, ankle clonus was present on both sides, and the Babinski sign was negative. The gait was slow but fairly steady, the steps short. He walked with the feet apart, head retracted, and after taking a few steps would come to a halt with a tendency to lean backward, sometimes taking a step or two backward to regain his balance. While standing with eyes open he exhibited a marked tendency to fall backward, and this was increased when the eyes were closed. The mental condition was poor; although he gave a fairly definite account of events in his past life, memory for recent events was very incomplete, and orientation for time was almost entirely lost.

Subsequent History.—From the time of his admission, until his death, four weeks later, he became gradually and progressively worse; mentally, more dull and finally stuporous; all of the reflexes became more prompt, with a tendency to spasticity on the left side. Slight ataxia developed in all of

* From the Philadelphia Hospital and the Laboratory of Neuropathology of the Medico-Chirurgical College. Read before the Philadelphia Neurological Society, April 23, 1909.

the limbs, and the loss of equilibration became so extreme that he could not remain in a sitting position, invariably falling backward, although the muscular power remained good. Incontinence of the sphincters appeared and persisted after about two weeks.

Postmortem.—At necropsy the pathologic condition found was syphilitic cerebrospinal meningitis, which was especially marked at the base of the brain where the new tissue formation had caused thickening in the pia-arachnoid and complete occlusion of the foramen of Magendie. All of the ventricles of the brain were much dilated, but especially the fourth, where the distention had caused compression of the white matter of both cerebellar hemispheres, and displacement and compression of the dentate nuclei in a symmetrical manner. No gross lesions of any other character were present. That the foramen of Magendie was impervious was demonstrated by removing the pons, medulla and cerebellum from the cerebrum by an incision through the cerebral peduncles, and filling the fourth ventricle *via* the aqueduct of Sylvius with a solution of eosin; the specimen was then dissected and it was found that none of the stain had penetrated beyond the cavity of the ventricle. Microscopically, the usual changes of cerebrospinal syphilis were present in the meninges and blood vessels of the brain and cord, and in addition, degeneration of many of the cells in the dentate nuclei of both sides, and degeneration, even disappearance in places, of some of the cells of Purkinje in the cerebellar cortex. The distention of the fourth ventricle in this

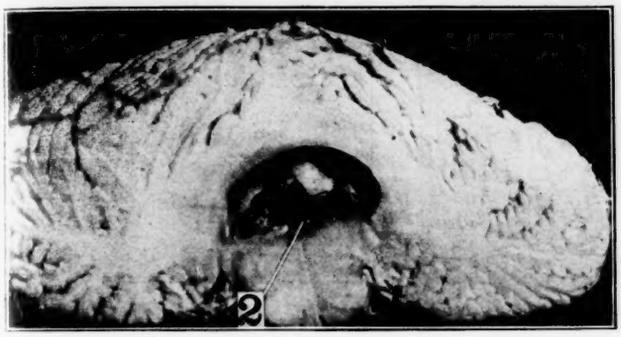


Fig. 3.—Section through the cerebellum and the medulla showing the matted condition (2) of the choroid plexus at the site of the occluded foramen of Magendie.

case evidently acted as a symmetrical bilateral lesion involving both dentate nuclei and vermis and accounts for the purely backward type of cerebellar incoordination.

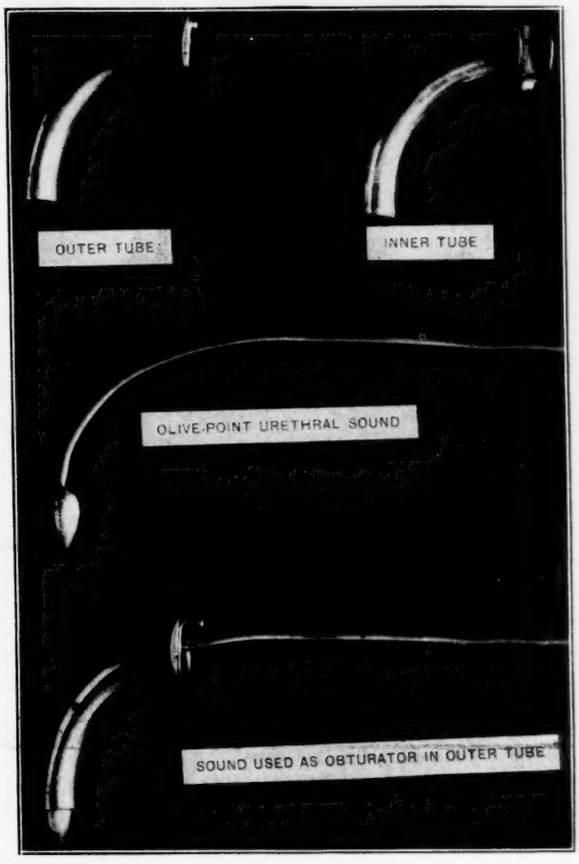
5249 Spruce Street.

The Prevalence of Fleas on Rats and Squirrels.—Previous observations made under government auspices have shown the occurrence of plague in the ground squirrel. The conveyance of plague from rodent to rodent by means of the flea has been proved and it has been shown that the fleas that ordinarily infest rats and also those infesting squirrels will bite man. The possibility of the agency of the ground squirrel in spreading the plague to man is therefore shown. G. W. McCoy and M. B. Mitzmain, in *Public Health Reports*, July 16, 1909, give the results of further investigations in this direction. Rats and squirrels were combed to determine the varieties and average number of fleas which they harbor. While the large majority of fleas are found associated with their proper hosts, it was found that rat fleas occasionally infest squirrels, and vice versa. It has been shown that the rat will live in perfect harmony with squirrels in captivity. The average number of fleas found on a rat varied from 4.7 in one series to 7.6 in another. Live ground squirrels yielded a larger average, 34. Mice, rabbits, skunks and other similar animals were also found to be infested. The nests of rats were found to harbor more fleas than the animals themselves. By placing rats in cages with squirrels, and vice versa, it was shown that an interchange of fleas took place, indicating that fleas from rodents readily adapt themselves to hosts of different species.

OLIVE-POINT SOUND USED AS AN OBTURATOR

J. E. TUCKERMAN, M.D.
CLEVELAND, O.

Some four or five years ago, while his own physician was away, a man who had always worn a tracheotomy tube came to me to have the same replaced. The tube had been out some days and the opening was contracted from side to side. On trying to replace it, the tube acted much like a reamer or corer, and would not slip in without paring the edges of the opening. Resort to the makeshift shown in the illustration made the introduction easy. The matter passed entirely from mind until recently my brother, Dr. W. H. Tuckerman, had a like difficulty in introducing a tube, larger than the one



An improvised obturator to facilitate introduction of tracheotomy tube.

being worn, into the trachea of a growing child who has constantly to wear a tube. Again the device shown made the procedure easy.

An obturator might very well be a part of every tracheotomy tube. A tip could be made with a shoulder to fit the inner tube which could then act as an obturator during the introduction of the outer tube. Withdrawal of the inner tube and removal of the tip would then allow the inner tube, when replaced, to fulfill its usual office. No doubt the same or like makeshift has been used by others. Still, even though tracheotomy is not now the common operation it once was, the accompanying illustration may be of interest and perhaps will lead some instrument maker to design a complete tracheotomy tube.

1856 Central Avenue, S.-E.

BOWING OF THE SHAFT AS A CORRECTIVE MEASURE IN DEFORMITIES OF THE UPPER EXTREMITY OF THE FEMUR

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A class of deformity presents itself rather frequently to the orthopedist offering unusual difficulties on account of actual loss of bony tissue. Reference is made to those cases of absent epiphyses caused by acute suppurative arthritis, epiphysitis or tuberculous disease. The head of the femur is the common seat of such a lack. There presents, also, in the femur, abnormal deviations of the axis of the head and neck with the axis of the shaft, giving coxa valga, etc. For example, Figure 1 shows a defect in the femoral head due to arthritis; Figure 2 shows a typical case of coxa valga.

Fig. 1.—Femur, presenting deformity resulting from congenital arthritis (Case 1).

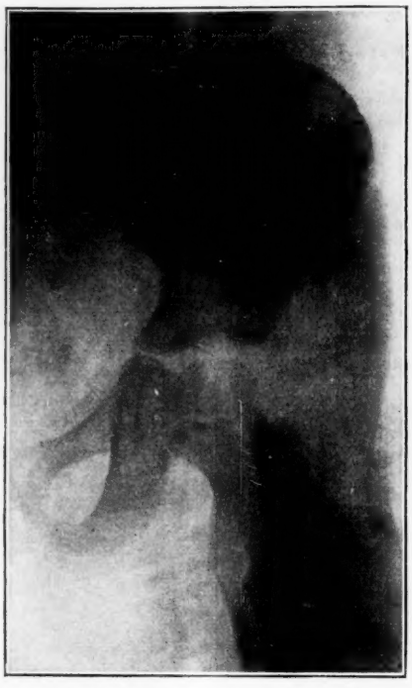


Fig. 2.—Case coxa valga; common type causing limp only (Case 2).

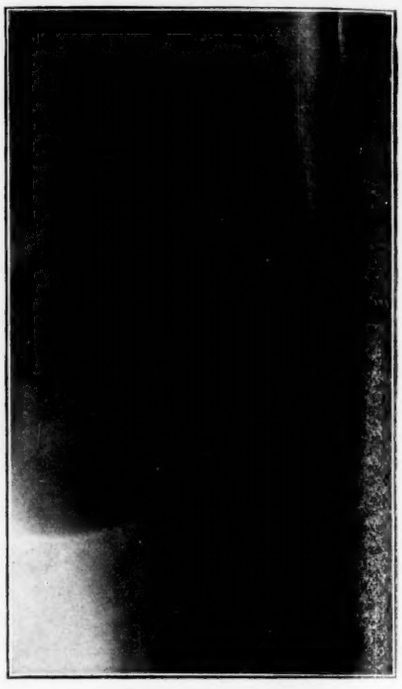


Fig. 3.—Result of femoral bowing in coxa valga (Case 3).

The question as to treatment has ever been a vexatious one, and authorities are apt to hedge. Lorenz advocates ankylosing the top of the femur to the acetabulum, but ankylosis is almost impossible in the very young. As a matter of fact, the results of these atypical cases have been far from satisfactory. Acknowledging that the idea was forced on me purely by an accident, let me report the results of a new mode of treatment, consisting in the bowing of the femur by artificial means so that it may maintain a position in the hip capable of performing function. Also let me report the results of the utilization of the same idea in other conditions at the femoral head. In coxa valga, bowing is used as a substitute for osteotomy.

A glance at the Figures 4 to 7 will show the purpose of the bowing. In weight-bearing the upward forces resolve themselves into the longitudinal and the lateral forces; the mean in any direction being the resultant. When by accident or deformity the direction of the resultant force falls in the lower half of the arc of the acetabulum we notice a tendency to dislocation, usually outward at first and then upward. When, however, the direction of the resultant pierces the upper half of the arc, as it does in the normal hip, this tendency to misplacement does not exist. Cuneiform osteotomies have endeavored to alter the direction of the resultant. For the same purpose I have bowed the femur. Of course, the method would be practicable only in childhood.

CASE 1.—Girl, aged 3, presented to me in February, 1908, with history of an acute arthritis (suppurative) during first two months of infancy. Evidence of sinus in gluteal region and history of much discharge. Sinus closed end of second

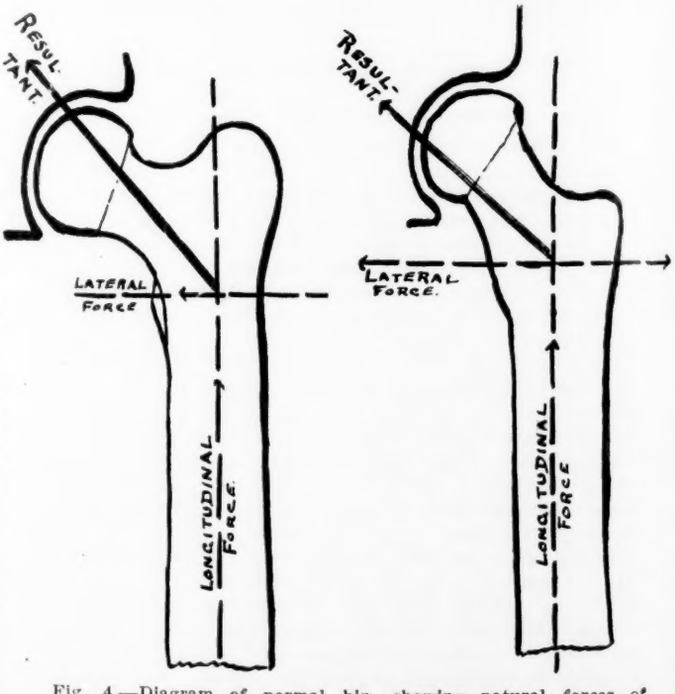


Fig. 4.—Diagram of normal hip, showing natural forces of weight-bearing and natural resultant.

Fig. 5.—Diagram of hip in coxa valga, showing direction of resultant force with tendency increased to dislocation.

month. Only symptom noticed by parents was the limp that accompanied walking. The femur presented the appearance shown in Figure 1. The head was absent and dislocation was considerable.

When confronted with this condition in a child so young, I determined to reduce the dislocation and temporize by maintaining the thigh in extreme abduction, encasing in plaster as after the congenital hip replacements. This was done, the plaster including the knee, and the child returned home. An infectious disease in the home prevented her from returning to the city for three months. On her return I found, on the removal of the cast, that the child's rapid growth had bent the femur outward very markedly. My chagrin was lightened by the idea that such a bowing might be utilized to compensate for the lost angle at the femoral neck. Another cast was snugly applied and worn for two months. On the removal of this second cast I was delighted when the leg was adducted to note that considerable motion entirely failed to redislocate the hip. For the last six months or more I have retained the thigh in considerable abduction in a plaster spica and the knee straight

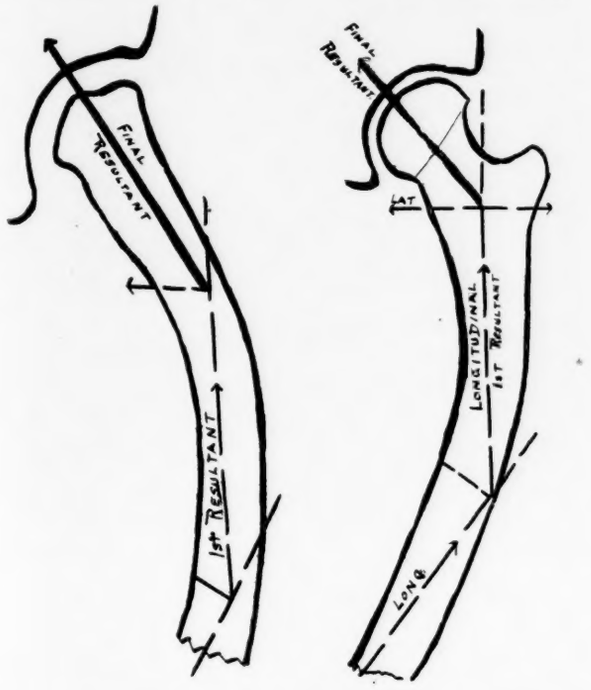


Fig. 6.—Diagram of hip in epiphysitis with loss of femoral head; femur bowed, showing final result of bowing.

Fig. 7.—Diagram of hip in coxa valga with bowed femur, showing forces of weight-bearing modified by bowing of shaft, with direction of consequent resultant.

but still maintaining the femoral bowing. I allow constant weight-bearing and have had no tendency to misplacement whatever.

CASE 2.—Girl, aged 4; history unimportant except that right-sided limp had been present on weight-bearing since child learned to walk. No pain or other symptoms whatever. Radiograph (Fig. 2) shows coxa valga deformity with angle of 165 degrees. Cuneiform osteotomy was refused. Rather than resort to fixation in abduction I decided to try bowing of the femur. In four months I had produced an artificial bowing outward by applying a tight-fitting round-and-round plaster, the thigh flexed and abducted to right angles with the body. When sufficient bow was produced the patient was freed of splints and under observation weight-bearing was allowed. There is no shortening. The limp disappeared and walking is normal.

CASE 3.—The essential points in the history of this case of coxa valga are illustrated in the history of Case 2. Figure 3 shows the result.

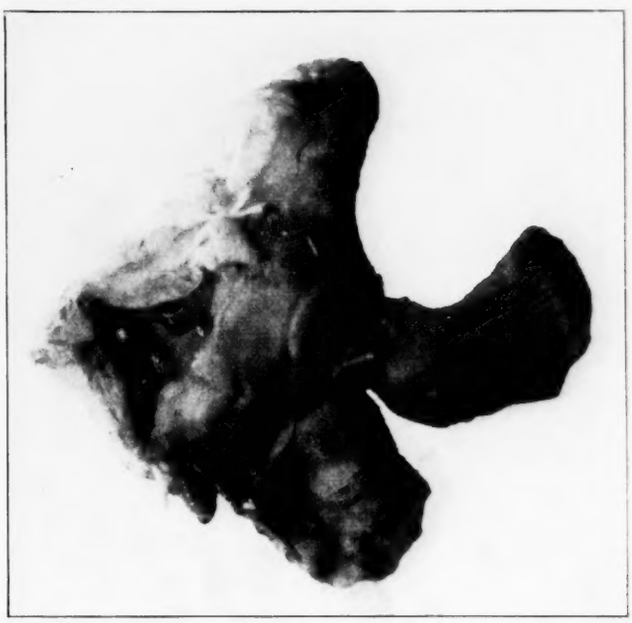
Provident Building.

SHOT IN THE APPENDIX VERMIFORMIS*

H. S. MARTLAND, M.D.
NEWARK, N. J.

History.—J. D., male, aged 30, was admitted to the surgical division of the City Hospital, service of Dr. E. R. Haussling, suffering from an acute appendicitis, which he had had for two days. The patient was immediately operated on, and the appendix, which had not ruptured, was removed. A localized abscess developed, which drained well. The patient left the hospital in twenty days cured.

Appendix.—The appendix measureed 5 cm. in length; its outer two-thirds was triangular in shape, and sacculated. (See illustration.) The dilated portion contained pus, necrotic tissue, fecal matter, and twenty-two shot. The size of the shot was No. 8, and they showed signs of discharge. Microscopic examination showed an acute suppurative inflammation, together with a chronic process. The proximal end presented a thickened and rigid muscularis, which caused the lumen to remain patent and large.



Appendix, showing the presence of shot.

It seems probable that the presence of the shot had only an indirect part in causing the present attack, and that their presence in the appendix was due to the unusually large and rigid opening into the cecum, caused by a previously existing inflammation.

The patient attributes the presence of the shot to the eating of stewed rabbit.

Howard Kelly says:

Of the heavy bodies which gain access to the appendix, the most common are shot or bullets. The rôle of shot resembles that of concretions, being purely passive; such bodies may occasionally produce abrasions of the mucous membrane, but, as a rule, they act indirectly, by obstructing the lumen, or by causing pressure anemia of the wall, and diminishing the vitality of the tissue.

Foreign bodies in the appendix, however, are unusual; in 1,000 cases at the Johns Hopkins Hospital they occurred in four cases only.

Physical Education.—The attempt of the National Education Association to persuade congress to organize a bureau of physical education similar to those found in most of the progressive countries of the world should be aided by all good citizens.—P. C. Phillips, in *Hygiene and Physical Education.*

*From the Pathological Laboratory of the Newark City Hospital.

PRACTICAL WINDOW VENTILATION

WILLIAM J. MANNING, M.D.
Medical and Sanitary Officer, Government Printing Office
WASHINGTON, D. C.

One of the most difficult tasks, where many persons are gathered together under one roof, during the winter season and inclement weather, is the proper enforcement of healthful ventilation and the regulation of temperature in work rooms without meeting many protests.

Tersely stated, the idiosyncrasies of James Brown do not coincide with the idiosyncrasies of John Smith, so that what blows hot for John blows cold for James, and as a result one desires the window tightly closed, no matter the degree of temperature, and the other demands the window open.

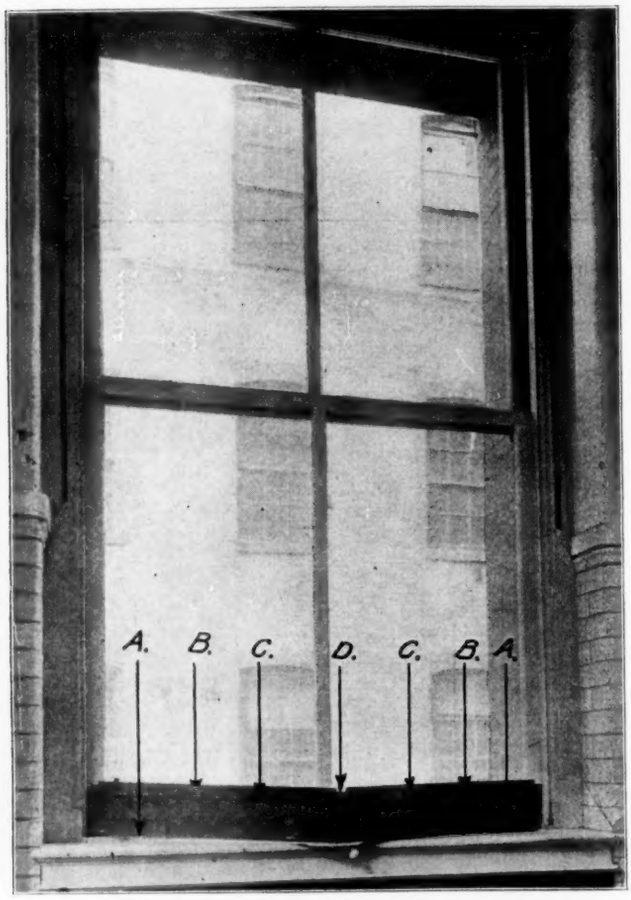


Fig. 1.—Ventilator about to be placed in position under window-sash.

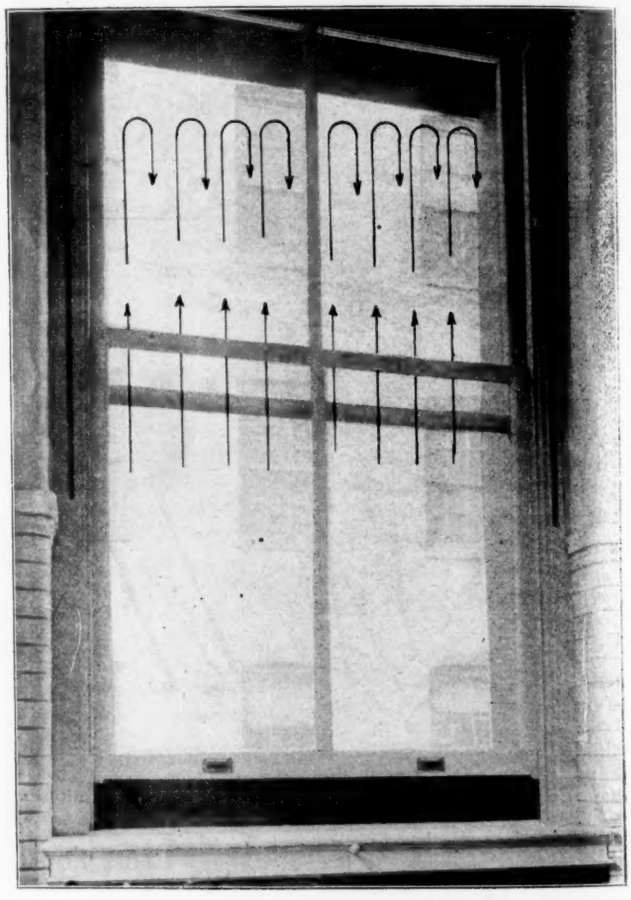


Fig. 2.—Ventilator in place with window closed, the air passing upward between top and lower window-sashes.

Of course, in many of the larger buildings over the country, systems of internal ventilation are in use, some effective and some ineffective, but all very expensive and complicated. It is the smaller buildings, however, that interest me.

To aid the ventilation of those buildings which are not thus provided for, such as small workshops, factories, stores, etc., and to aid, even where ventilation systems are in use, has been my idea in publishing the present modification of a very old method of placing a board lengthwise under a window.[1]

It will be noticed on reference to Figure 2 that a current of fresh air is constantly entering the room far above the heads of those persons who may be employed within such apartment and in such a manner that no person is directly exposed to any draft or to "catching cold." One such ventilator in every third window in a large room will be found sufficient, in the majority of cases, to admit sufficient air to keep otherwise closed rooms in a healthful condition.

I have found this simple method, as constructed and in use in this office, to be most practical, cheap and effective. Any "handy man" about a factory or workshop with a saw, hammer, plane, a few nails, hinge and a piece of board may construct one of these ventilators at the cost of a few cents by following the directions given.

Measure the distance between window-frame from side to side, or flush with ends of window-sash that works up and down in the groove, or between the parting strip and window-frame; now select two boards not less than six inches in height and each half the length measured, and of the same thickness as the window-sash, or made so by piece of wood or cleats nailed to the ends of the boards making up for such thickness; bevel the under edges of the boards (AA, Fig. 1) to fit the window-sill; bevel the top edges of the boards (BB, Fig. 1) to fit the descending window-sash. Nail a piece of wooden moulding or a common lath (CC, Fig. 1) to the inner top of the edge of the board, within which the closed window-sash will rest as shown in Figure 2.

This joint (CC, Fig. 1) may be lined with felt, or tailors' woolen selvage edges that permit the window-sash to jam tightly into the joint, making it air-tight, if

1. Egbert: Hygiene and Sanitation.

desired, and preventing direct draft on any person, no matter how cold it is or how high the wind is blowing.

A hinge, bending outward, is now placed at the point marked (D, Fig. 1). When putting the ventilator in position, pressure outward simply snapping it in place, ready for descent of window-sash; pressure inward "breaks" the board for removal.

Large thermometers, about two feet in length, are suspended from the ceilings of work-rooms during the winter season. The figures 70 and 80 on the scale, marking the extremes of healthful indoor temperatures during the season mentioned, have been enlarged to one inch in size, and are further distinguished by broad red arrows placed above and below the figures respectively. The scale is, therefore, readable from all parts of the room, and serves as a constant indicator or danger signal in a silent, effective manner.

Therapeutics

DIABETES

As is true of all diseases, this could be more successfully treated if we knew in each instance its exact etiology. It is not necessary to rediscuss the known disturbances that cause glycosuria, but Dr. Alfred King, of Portland, Me. (*New York Medical Journal,* July 3, 1909), terms this disease infectious, and states his excuse for such a classification to be the fact that he has found, in sixteeen patients suffering with this disease, the yeast fungus (*Saccharomyces cerevisiæ*) in the blood. He takes a drop of blood from a finger which has been made sterile, and not only finds the yeast fungus under the microscope, but has been able to grow the fungus in culture fluids. His method may be learned from his article. He has also found by a study of the opsonic indices that when the patient is doing well his opsonic index is high; when the patient is debilitated, miserable, and losing ground, his opsonic index is low. He has also found that hypodermatic injections at intervals of from three days to a week of from 5 to 15 minims of the fluid produced by a twelve-hour growth of the fungus (of the strength of 100,000,000 of dead fungi in 15 minims of sterile salt solution) have raised the opsonic index and improved the condition of six patients.

King allows some starchy foods, as a little oatmeal, half a slice of bread, or a small potato, with each meal.

From his investigations King says: "Because diabetes is a disease of fermentation; because the yeast fungus is often found in the blood; because its actions explain all the symptoms as well as the pathologic conditions; because the patients show a disturbed power of resistance to this fungus; and because this lowered resistance is increased by treatment with vaccine, I believe this yeast fungus is the cause of diabetes, and that it should be treated as an infections disease." He thinks this fungus may be removed by the use of antiseptics, but he has not yet learned how to do this.

His general treatment by diet, for the amelioration of symptoms, and the condition of acidosis are the same as are so well understood.

This interesting discovery by King should stimulate physiologists to a general study of the frequency and constancy of the yeast fungus in the blood of diabetics.

INTESTINAL OBSTRUCTION

It is not the purpose of this article to discuss all of the forms of obstruction that can occur in the intestine, but to offer a caution or two for the necessity of early diagnosis and immediate surgical consultation and early operation in all forms of absolute obstipation.

If obstruction is diagnosed or even suspected, cathartics must ordinarily not be administered. Also morphin, by masking the symptoms, is almost dangerous. As well pointed out by Dr. H. F. Waterhouse (*British Medical Journal,* May 29, 1909), the obscuration of the condition by one good dose of morphin may postpone a necessary operation until gangrene, septic exudate, or perforation and consequent peritonitis has made the prognosis fatal, and a favorable result from operation almost impossible.

While pain in the abdomen may be referred to any part, the diagnosis of localization is made by the region of tenderness, and the ability to find tender points and localized lesions becomes more and more difficult the later in the condition the attempt is made. In other words, very careful abdominal examination should be made whenever there is abdominal pain. Later, tenderness may be so generalized as to make a localization impossible.

The object of Waterhouse's paper is to show that in his experience volvulus, twisting of the intestine, is more frequent than has been supposed, and probably in many cases cured spontaneously. He finds that an elongated lower segment of the sigmoid part of the intestine is the most frequent position of such twisting. Prolonged constipation, and this in older and debilitated patients especially, elongates the lower part of the sigmoid of the intestine and the upper part of the rectum (this region being termed the omega loop), gives the excuse for this region being the region of most frequent twisting. Early examination of the abdomen will generally show that this is the part of the intestine in trouble. Pain, obstipation, and gas distension are the immediate symptoms. Vomiting, Waterhouse points out, may not be present in volvulus of this region.

High enemas of warm water, with the patient in the knee-chest position, will sometimes untwist this part of the intestine, and the symptoms may cease as quickly as they began. During the time of doubt and waiting before an operation is deemed advisable, all food should be absolutely withheld, although the patient may be allowed water by the stomach.

Waterhouse finds that the onset of gangrene of the twisted bowel is indicated "by the pulse becoming rapidly weak and quick, and by the septic appearance of the patient."

It must be emphasized that ordinarily to be successful operation must be done before such symptoms are in evidence.

Massage Best Remedy for Loss of Hair.—Ingenious men, says Dr. T. O. Cobb, in *New York Medical Journal*, are continually contriving new kinds of shoes, new suspenders, and hundreds of different kinds of braces, but so far no one has taken up the idea of making a hat which will hold on the head and not blow off, and at the same time not bind the head all around like a constricting band. Some one ought to invent a hat which will prevent baldness. Hundreds of remedies are on the market which are advertised as sure hair restoratives, but not one of them will bring back one hair once the hair follicle is atrophied and functionless; nor will any of these remedies prevent the falling of hair unless the habits of the sufferers are changed. At best these remedies are merely skin irritants, which promote a slightly increased flow of blood to the scalp. Dandruff cures are mostly fakes. The only good accomplished by these medications is the scalp massage indulged in while applying them, and the practitioner should make a fight against their use.

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SATURDAY, OCTOBER 16, 1909

THE PATHOGENESIS OF TYPHOID FEVER

The typhoid bacillus is one of that troublesome group of organisms which produce their effects through poisons which are liberated only when the bacteria are disintegrated—troublesome because the animal body seems to have little or no power to produce antitoxins for these "endotoxins." Hence the reason for the early abandonment of the once-cherished hope of universal antitoxin therapy for all infectious diseases. It also happens that the chief means of defense against the typhoid bacilli consists in the power of the blood serum to cause bacteriolysis, and as by this bacteriolysis the endotoxins are liberated but not neutralized, it results that the destruction of large numbers of typhoid bacilli in the blood may not always be an unmixed blessing. To illustrate by an experiment, if a large dose of typhoid bacilli be injected into an animal that has been immunized to this organism, and into another, non-immunized, animal an equally large dose be injected, it may happen that the immune animal will die in a few hours while the normal control may live much longer. The reason for this is that the immune animal has acquired the power of destroying typhoid bacilli, and by producing the rapid disintegration of the injected organisms it causes their endotoxins to be liberated in a single large dose, against which the animal has no defense. Such an animal may die from the bacterial intoxication when cultures show that the blood is entirely free from living bacilli, while, at the same time, the control may live much longer with abundant living bacilli in its blood.

As in typhoid fever the bacilli are present in the blood almost constantly and continuously from the earliest stages, it is evident that this matter of the liberation of endotoxins by bacteria destroyed within the blood must be of much importance in the clinical manifestations of the disease. That the typhoid bacillus may be present in the body and not cause typhoid fever is well known, especially since the prevalence of bacillus-carriers has become recognized. It may even invade the tissues and cause extensive lesions, such as post-typhoid bone abscess, cholecystitis and pyelitis, without producing the features of typhoid fever. Therefore, it would seem that to produce typhoid fever the bacilli must grow in a situation where they have free access to the blood; entering the blood they cause the clinical condition of typhoid fever by becoming disintegrated and liberating their endotoxins.

From their studies of the bacteriology of the blood in typhoid, and experimental investigations on animals, Coleman and Buxton[1] have developed an interesting and plausible theory of the pathogenesis of the disease. They believe that the atrium of the infection is in the lymphatic structure of the intestinal wall; from here the bacilli reach the general lymphatic system and the spleen, where they seem able to grow, being here in a measure protected from the bactericidal power of the blood. After they have grown to a sufficient amount, corresponding to the period of incubation, they overflow into the blood, where, the bacilli undergoing bacteriolysis, the endotoxins are set free and cause the symptoms of the disease. It seems probable that in most cases of typhoid the bacilli do not multiply to any considerable extent in the blood stream, but are destroyed there; hence typhoid fever is not to be looked on as a septicemia, but a bacteriemia. When the endotoxins are liberated in the tissues, as in post-typhoidal suppurations, we do not get the typical symptomatology and pathology of typhoid; these result only from destruction of numerous bacilli in the blood stream.

Subsidence of the fever seems to depend on the cessation of discharge of bacilli from the lymph glands into the blood, probably because the immunity processes have succeeded in checking the multiplication of the bacilli in the lymphatic tissues. It is possible that those cases in which an intermittent temperature persists after the original febrile movement has subsided may be due to irregular discharge of bacilli from some lymphatic organ in which the bacilli still continue to grow. Relapses probably arise in this way, for it is known that the spleen sometimes remains large after subsidence of fever in patients who subsequently relapse, and it may well be that this enlargement indicates the local persistence of the infection, which may later flare up as the immunity reactions wane. That the resistance to the typhoid bacillus does wane, especially as regards local rather than systemic resistance, is shown by the frequency with which after recovery from systemic infection local infections appear in the form of abscesses, cholecystitis, etc.

This hypothesis not only has good experimental support, but it also is more easily accepted than the view which seemed to be becoming prevalent that typhoid fever is in reality a septicemia, for this latter view requires the assumption that the bacilli are multiplying in blood which, experiment shows, is strongly bactericidal. As support by analogy, Coleman and Buxton refer to the case of the related organism, *Bacillus paratyphosus*, which when infecting the intestines produces merely the clinical picture of a gastroenteritis, but when it has invaded the lymph glands and blood produces a disease clinically indistinguishable from typhoid fever.

1. Am. Jour. Med. Sc., 1907, cxxxiii, 896; Jour. Med. Research, 1909, xxi, 83.

The power of typhoid bacilli to persist in the lymph-adenoid tissues long after they have disappeared from other organs may be considered to be another of the many examples of specific adaptation of bacteria to a special soil, a property of bacteria which was first made prominent by Welch.

THE PURIFICATION OF WATER WITH BLEACHING-POWDER

We have recently referred[1] to the use of ozone for the purification of drinking-water and have dwelt on the fact that the high or indeterminate cost of the various ozonization processes stands to some extent as a barrier to the general introduction of this method. It might be added further that ozone is not the only substance that can be employed for the "practical sterilization" of water, and that from a chemical point of view other substances are theoretically available for the treatment of large public supplies. Experiments lately conducted on the Jersey City water-supply appear to bear out this view.[2] Commercial bleaching-powder, an impure product the active ingredient of which is hypochlorite of calcium, has been used increasingly in the disinfection of sewage effluents during the last few years, and on at least one occasion (Maidstone, England, 1897) it has been used to disinfect a public water-supply suspected of carrying the infection of typhoid fever. Its use on a large scale in the Jersey City experiments is therefore only a further utilization of its already well-known germicidal powers. When calcium hypochlorite is added to a natural water, hydrogen oxychlorid or hypochlorous acid is released in the water. This compound is a very weak acid, but an extremely powerful oxidizing agent. The treatment is, therefore, in no sense a chlorin treatment, but purely one of oxidation quite comparable in this respect to the process of ozonization.

The bleaching-powder employed in the Jersey City experiments contained on the average about thirty-five per cent. of "available chlorin," equivalent to about seven and nine-tenths per cent. of "available oxygen." The powder was applied during the latter part of the experiments in the proportion of about five pounds per million gallons of the water treated. The bacterial results were very favorable, the total number of bacteria in the treated water averaging only fifteen and *Bacillus coli* being isolated only once out of 455 samples examined. The process has one important chemical advantage, namely, that it brings about a reduction in the amount of carbonic acid in the water (through action of the calcium) and hence lessens the incrusting and corrosive action on iron and steel pipe.

The total cost of the process is stated to be between twenty and twenty-five cents per million gallons, or only about one-twentieth the cost of the ozonization process, so far as the latter can be determined from available data. When water-power can be obtained without additional expense, available chlorin can be produced in the electrolytic cell and the whole process thereby considerably cheapened. It should be said that the water dealt with in the Jersey City experiments does not appear from the published analysis to be very highly polluted, the bacterial content of the raw water ranging as low as 30 per c.c. and rarely going above 1500. There seems indeed to be some question as to the necessity for disinfecting this particular water, and the matter is still before the courts. Further experiments under different conditions should throw more light on the real efficiency of bleaching-powder as an agent for the purification of water-supplies, and we shall probably not have to wait long before these are made.

1. THE JOURNAL, Aug. 21, 1909, liii, 636.
2. Engin. News, June 24, 1909.

DISSECTION THEN, VIVISECTION NOW

In the midst of the attention attracted by the recent meeting of the antivivisectionists in London we were reminded of a corresponding agitation against dissection at the beginning of the nineteenth century. Bodies were extremely difficult to obtain, and they were secured by all sorts of underhand and illegal means. A whole series of murders committed for the sole purpose of obtaining bodies to be sold to medical schools had been unearthed in England and Scotland, yet the opponents of dissection absolutely refused to listen to reason and allow the passage of an anatomy bill by which the bodies of the poor who died in charitable institutions were to be given to medical schools for dissection purposes. The bill met great opposition in parliament from men who sentimentally insisted that such a law would work great harm to the poor. In the course of the debate Lord Macaulay, better known for his essays than his speeches, delivered a short address on Mr. Warburton's anatomy bill which Mr. Hunt had attacked with great asperity. Because his speech contains the answer to some of the sentimental objections of the "antis" in our day and, above all, because it illustrates the fact that no great humanitarian movement ever makes its way without serious opposition on the part of people who think themselves humanitarians, we quote two of the passages:

"If we could do all that, in the opinion of the member for Preston, ought to be done, if we could prevent disinterment, if we could prevent dissection, if we could destroy the English school of anatomy, if we could force every student of medical science to go to the expense of a foreign education, on whom would the bad consequences fall? On the rich? Not at all. So long as there is in France, in Italy, in Germany, a single surgeon of eminent skill, a single surgeon who is, to use the phrase of the member for Preston, addicted to dissection, the surgeon will be in attendance whenever an English nobleman is to be cut for the stone. The higher orders in England will always be able to produce the best medical assistance. Who suffers by the bad state of the Russian school of surgery? The Emperor Nicholas? By no

means. The whole evil falls on the peasantry. If the education of a surgeon should become very expensive, if the fees of surgeons should consequently rise, if the supply of regular surgeons should diminish, the sufferers would be not the rich, but the poor in our country villages, who would again be left to mountebanks, and barbers, and old women, and charms, and quack medicines. The honorable gentleman talks of sacrificing the interests of humanity to the interests of science, as if this were a question about the squaring of the circle or the transit of Venus. This is not a mere question of science; it is not the unprofitable exercise of an ingenious mind; it is a question between health and sickness, between ease and torment, between life and death. Does the honorable gentleman know from what cruel suffering the improvement of surgical science has rescued our species?"

We feel sure that what Lord Macaulay said at the end of his speech with regard to dissection he would, if called on, repeat at the end of a corresponding speech in a vivisection discussion before the House of Commons at the present time. What he has to say, therefore, is of interest, especially because the two situations so nearly resemble each other:

"I think this is a bill which tends to the good of the people, and which tends especially to the good of the poor. Therefore, I support it. If it is unpopular, I am sorry for it. But I shall cheerfully take my share of its unpopularity. For such, I am convinced, ought to be the conduct of one whose object it is not to flatter the people, but to serve them."

SCORPION VENOM AND ANTIVENOM

The sting of such scorpions as are encountered in this country seems not to be usually serious, although extremely painful and sometimes followed by dangerous sloughing and infection. In Egypt, however, scorpions are encountered which cause no inconsiderable fatality in children under 12, though the sting is rarely fatal in adults. The reason for this limitation of fatalities to children has been shown by Wilson, of the Egyptian Government School of Medicine, to depend on the fact that the average amount of poison in the most venomous of the Egyptian scorpions is capable of killing but about thirty-five kilos. During seven years there were recorded 153 deaths from scorpion sting in Cairo, while the incidence of deaths from this cause is, naturally, much higher in the country districts. In Assouan scorpions caused 1.6 per cent. of the total death rate, according to government statistics.

Although the poison from the scorpion resembles in some respects the snake venoms, yet it differs in many important particulars, especially in that it is not hemolytic, and the symptoms in animals, as described by Wilson, resemble much more closely the symptoms observed in animals dying from anaphylactic intoxication with proteins than they resemble snake poisoning. Different species of animals vary greatly in respect to their susceptibility to scorpion poison, although nearly all animals are seriously poisoned by the venom of a single sting. An interesting exception was found by Wilson to exist in certain desert animals of Egypt, which live under conditions which bring them into frequent contact with scorpions. Such animals, including desert rats, hedgehogs and foxes, possess a high degree of immunity, and a native house mouse was found also to be immune, although the ordinary mice and rats are very susceptible. It is also reported that some people who live where scorpions abound are immune to their stings, and some of these persons claim to make themselves immune to the scorpion by repeated small doses of the poison administered by pricking the skin with the stings removed from scorpions. Todd takes pains to state, however, that the Arabs who exhibit scorpions in the streets of Cairo for the entertainment of tourists are not immunes, but protect themselves by cutting the points off the stings of the scorpions. The old tradition that when a scorpion is surrounded by a ring of fire it commits suicide with its own stings is entirely fabulous, for the scorpion, like other venomous creatures, is immune to its own poison; indeed the blood of the scorpion was found by Metchnikoff to have considerable antitoxic power against scorpion venom.

The mortality, not to mention the serious effects produced by non-fatal stings, from scorpions in Egypt is sufficient to make the preparation of an antitoxin desirable, and this task has been accomplished by Dr. Charles Todd,[1] of the public health department of the Egyptian government. Calmette asserts that his antiserum for cobra venom neutralizes the venom of certain scorpions, but Todd found it ineffective against the venom of the scorpions of upper Egypt. Antiserum prepared by immunizing horses with scorpion poison, however, was capable of neutralizing in 2 c.c. doses the poison of one scorpion, and had both prophylactic and curative properties. During last summer this serum was in use in Egypt, and the results, both as to mortality and reduction of pain, are said to have been favorable.

INSTITUTIONAL CARE OF THE TUBERCULOUS

The tuberculosis campaign has passed through several distinct stages, and with increasing experience new points of view demand a change of tactics. At one time the prohibition of the use of milk and meat from tuberculous cows assumed the prominent rôle. Again, the sanatorium has been expected to solve the problem by education and cure of patients in the early stages. This method has been successful only in a degree, new cases continually developing. The source of contagion in these new cases is generally to be found in the homes of patients in the advanced stages, whom it has not been thought worth while to admit to sanatoriums. To remove this source of the disease the visiting nurses' movement

1. Jour. Hyg., 1909, ix, 69.

was instituted, whose aim was so to educate and to care for the advanced consumptive that he might no longer be a menace to his family and neighbors. Mary E. Lent,[1] head nurse of the Instructive Visiting Nurse Association of Baltimore, reviews the work of her association, and concludes that, while good has been done to individuals, the method, as a means of preventing the spread of tuberculosis, is a failure. She says: "As a matter of fact, the experience of four years of continuous work in the homes of tuberculous patients of the class under consideration has demonstrated to me that the results hoped for have not been obtained and, moreover, are not obtainable by this method." The principal reason for this failure is the poverty of the people, who are unable, for lack of means, of time and of proper surroundings, to give themselves or their friends proper care. Advanced patients lack the moral stamina to carry out strictly the hygienic instructions of the nurse. There is a great difference between the care which can be exercised even by a conscientious patient and the scientific application of the rules for prevention in a well-appointed hospital.

Segregation or isolation is the logical solution of the problem thus presented; but it must be borne in mind that we are dealing with independent citizens on whom the attempt to force segregation or isolation may react very unfavorably. In Germany great difficulty has been experienced in getting patients to go to hospitals for advanced cases on account of the feeling of the patients that the hospital is merely a place in which to die. The very terms "segregation" and "isolation" are objectionable, and our contemporary suggests that the term "institutional care" be used instead.

In removing the prejudices of the people and preparing patients for institutional care, the services of the visiting nurse are indispensable. While she cannot train patients to prevent the spread of the disease, amid the surroundings of poverty, she can by her investigations impress on the community the need of institutional care in these cases, and she can lead the patients themselves to see how much better it would be, both for themselves and for their family and friends, if they would accept the proffered institutional care. This much has been accomplished by the work in Baltimore, it seems, for it is stated that the patients there do not shun the hospital as patients do in Germany.

Whether institutional care will furnish a complete answer to the tuberculosis problem may well be doubted; but it has its important place in the agencies for controlling the disease, which has its roots deep in the social conditions which make for poverty, physical and moral degeneration. To remedy these conditions may be the task of more than one generation, but the urgent demand appears to be to extend the work of the visiting nurse and to supplement it by providing institutional care for such patients as she can induce to accept it.

1. Journal of the Outdoor Life, September, 1909.

THE SUSCEPTIBILITY OF RODENTS TO PLAGUE

It would be reasonable to expect that in communities where plague had long existed among rodents some would recover and in future be immune to the disease, and this has been shown to be the case with rats in India.[1] It is rather surprising, however, to learn that a large percentage of the rats (*Mus norvegicus*) in San Francisco are refractory to plague infection even when submitted to the rigorous test of inoculation with highly virulent cultures of the plague bacillus. McCoy,[2] of the Public Health and Marine-Hospital Service, during his investigations of plague in the federal laboratory at San Francisco, has found that from 20 to 70 per cent. of the large (old) rats experimented on were partially or entirely immune to laboratory infection. The percentage of immunity was found, however, to be not nearly so high among the smaller (young) ones. The arguments advanced to show that this immunity is natural and not acquired by reason of a previous attack of the disease are based on the high percentage of the immunity compared with the low percentage of rat plague in San Francisco, and the fact that some of the immune animals had been born after the subsidence of the plague. The question arises as to whether immunity to plague may be hereditary, as has been shown by Anderson[3] to be the case with immunity to diphtheria toxin. Experiments[4] made by McCoy with other rodents gave interesting results. He shows that field mice (*Microtus californicus*) are moderately susceptible to the disease and that gophers (*Thomomys bottæ*) are highly refractory to the infection. The most important fact brought out was that ground squirrels (*Citellus beecheyi*) seem to have no appreciable degree of resistance to the disease, as nineteen of these rodents were inoculated and all died of acute plague. This fact may be of some significance in connection with measures for the extermination of these rodents in California, where, according to reports, plague-infected squirrels are being found in considerable numbers. Laboratory experiments must, of course, be interpreted with considerable reservation, but those referred to would seem to indicate that there is small probability of the infection dying out spontaneously among these animals.

PHYSICIANS AND RAILROAD COURTESIES

It probably happens practically every day in the year that some physician somewhere in the United States is on a railroad train when an accident happens, and naturally offers to do whatever he can for the injured. Often it is imperative that such immediate service should be rendered to save a life in imminent danger, or to protect the sufferer from the hazards of bungling, inexpert interference. It is reasonably sure that a certain number of lives are saved by such unsolicited medical aid every year; and it is beyond all doubt that many persons injured in railway accidents are spared long convalescence, because through prompt medical aid they escaped the danger of meddlesome interference

1. Jour. Hyg., vi, 506.
2. Jour. Inf. Dis., vi, No. 3, 289.
3. Bull. No. 30, Hyg. Lab., P. H. and M.-H. S.
4. Jour. Infect. Dis., vi, No. 3, 283.

with their wounds at the beginning. In a certain number of these cases the injured persons are able and willing to pay for the physician's services; but such cases are extremely few. The services are rendered in any case; and the presence of the physician, especially if the injured persons are taken aboard the train to be carried to a more or less distant hospital, is a great saving of worry for patients, their friends and fellow-passengers and the employees of the railroad. But should this work be gratuitous? When the injured person himself is unable to pay, it would seem to be proper for the railroad company to make some compensation to the physician, even though his services may have been spontaneously offered. The railroad company is not a subject of charity. It is, as a rule, responsible for the accident; by prompt medical services it is frequently saved no inconsiderable sum in damages, because the patient recovers sooner and the consequences of his injury are not so serious. The present custom, however, is to allow no compensation to the physician and to consider that he has simply performed one of the acts of charity which are so common in his professional work. This policy is a relic of the old days when it was the custom for railroads to get as much out of the community as they could and to return just as little as possible. The modern railroad, however, is run on a much more liberal basis. There is a definite realization that duties are owed to all those with whom the railroad is brought in intimate relations. Apparently the physician is the only one who has not yet come within the purview of this new policy. Possibly it is the physician's own fault; possibly, if the profession would call the attention of railroad officials to the injustice of the present conditions, they would be remedied. Certain it is that every physician who gives of his time to the care of an injured passenger traveling with him should receive due compensation for what he does; and the railroad should not shirk its obligations in this matter.

Pancreatic Secretion.—P. T. Herring and Sutherland Simpson (*Quart. Jour. of Exper. Physiol.*, 1909, ii, 99), studied the pressure of the pancreatic juice in the pancreatic ducts of cats and dogs. In this connection the fate of the pancreatic secretion after the ligation of the duct was also investigated. It was found, as was shown by Langendorff, that the blood contains among other things, a larger amount of diastatic ferment after ligation of the duct. The proteolytic ferments of the blood were not increased. It then seems evident that the pancreatic juice, after the ligation of the duct, is thrown into the circulation. The proteolytic ferment does not make itself apparent in the blood, since the trypsinogen has no chance to be activated by the intestinal juice. "If the obstruction of the pancreatic secretion is a permanent one, the continual escape of pancreatic juice may be an important factor in the production of the fibrosis which follows ligature of the duct. This, indeed, is the explanation given by S. Pawlow of the ultimate changes which result from such a procedure. Atrophy of the gland substance itself may quite well be secondary to the outgrowth of connective tissue, and comparable to the atrophy of the parenchyma which occurs in cirrhosis of the liver." When the pancreatic duct or ducts are obstructed the pressure of pancreatic secretion rises to a height near to that reached by the bile in obstruction of the common bile duct. The intravenous injection of duodenal extract brings about a rapid rise of pressure in the pancreas after ligation of the duct.

Medical News

GEORGIA

Free Pasteur Treatment.—The Georgia State Board of Health reports that the free Pasteur treatment, which has been established in the state for the past year, has been employed in the case of 572 persons bitten by rabid animals, and that only one death has occurred.

Colleges Open.—Hospital Medical College, Atlanta, opened for its second annual term, September 21.——The fifty-fifth annual session of the Atlanta College of Physicians and Surgeons opened September 22.——The Atlanta School of Medicine opened for its regular session, September 14, with addresses by Dr. Thomas J. McArthur, Cordele, president of the Medical Association of Georgia, and others.

Personal.—Dr. George N. MacDonell has succeeded Dr. Odom O. Fanning, resigned, as superintendent of the Wesley Memorial Hospital, Atlanta.——Dr. James N. Brawner, head of the Atlanta Pasteur Institute, has started for Paris.——Dr. Charles J. Montgomery has been made professor of medical jurisprudence and hygiene in the Medical College of Georgia, Augusta, and Dr. J. A. Johnson has resigned from the faculty of the institution on accout of his removal to Nashville.

IOWA

Physician Wins Suit.—Dr. John D. Hullinger, Clinton, who was bound over to the grand jury in that city several weeks ago on the charge of having performed a criminal operation which resulted in the death of the patient, was freed from blame by the grand jury September 14.

Personal.—Dr. and Mrs. Frederick L. Appel, Muscatine, were painfully injured by the overturning of their automobile near Sweetland Center, September 21.——Dr. William Jepson, Sioux City, has returned from Europe.——Dr. Albert Chenoweth, Camanche, who has been ill with pleurisy, is reported to be convalescent.——Dr. George L. Everall, Clinton, is reported to be critically ill with cancer at Farmington, Ill.——Dr. and Mrs. Irenarch S. Buzard, Russell, start for Europe this month.

Health Boards to Meet.—The annual conference of state and local boards of health will be held at Des Moines, October 26 and 27. On the program appear the names of Clifford G. Roe, Chicago, assistant state's attorney, who will speak on the "White Slave Traffic," and Dr. Henry M. Bracken, secretary and executive officer of the Minnesota State Board of Health, who will present a paper on the "Quarantine of Smallpox." Dr. Fred Albert, Des Moines, secretary of the Iowa Association of Health Officers, requests that all local boards of health send their health officers to this meeting.

KANSAS

Physician Found Guilty of Contempt.—Dr. William S. Lindsey, Topeka, in charge of the cottages for the insane, adjacent to Christ Hospital, is said to have been found guilty of contempt of court by Judge A. A. Dana in the district court, October 2, for the violation of an injunction restraining Dr. Lindsey from receiving and treating insane patients at the cottages.

Contagious Diseases.—During August there was reported to the Kansas Board of Health, 294 cases of tuberculosis with 65 deaths, 351 cases of typhoid fever with 71 deaths, 54 cases of diphtheria with 7 deaths, 42 cases of scarlet fever with 4 deaths, 16 cases of smallpox with no deaths, and 35 cases of measles with 1 death. Tuberculosis, typhoid fever, diphtheria and measles were more prevalent, and scarlet fever and smallpox less prevalent than in the corresponding months of 1908.

KENTUCKY

Bequest.—By the will of the late Dr. William P. Wesselhoeft, Boston, Mass., Berea College receives a bequest of $5,000.

Personal.—Dr. John Todd has been elected a member of the Newport Board of Health.——Dr. Daniel J. Healey, Lexington, has been elected superintendent of the State Institution for Feeble-Minded Children, Frankfort, vice Dr. William L. Nuttall, Newcastle.

Physicians Organize.—At a meeting held in Covington, September 20, the Kenton-Campbell County Medical Examiners' Society was organized with an initial membership of ten. Dr. Charles E. Thompson, Covington, was elected president and Dr. William A. Young, Newport, secretary.

LOUISIANA

Sanatorium Notes.—Plans are being prepared by New Orleans architects for a new building for the Schumpert Memorial Sanatorium, to cost about $100,000, and to be located on the

old Hicks homestead.——Dr. Charles Chassaignac has had plans prepared and has awarded the contract for the building of an annex to the New Orleans Sanatorium, to cost about $20,000.

Personal.—Dr. George Dock, New Orleans, has returned from Europe.——Dr. Charles M. Menville, Houma, has been elected president of the Terrebonne Parish Board of Health.——Drs. Walter F. Carstens and Warren G. Young have been appointed members of the New Iberia Board of Health.——Dr. Joseph J. Holt, New Orleans, has resigned as president of the Prisons and Asylums Commission.

Against Tuberculosis.—The Antituberculosis League of Louisiana has received a donation of $5,000 from an unknown individual. This will be used as the nucleus of a fund of from $40,000 to $50,000, to be used in establishing a shelter in New Orleans for consumptives.——Dr. Edward L. McGehee, New Orleans, president of the Antituberculosis League of Louisiana, gave an illustrated lecture at Garyville, September 14, at the close of which a branch of the state league was organized.

MARYLAND

Hospital Day.—Hospital Day, which was celebrated at Easton, September 30, was attended by about 4,000 persons. The proceeds go to the Emergency Hospital.

Charge Dismissed.—The charge of assault against Dr. R. Percy Smith, Pikesville, was dismissed at the trial, September 25, the plaintiff not appearing.

Financial Committee Appointed.—The Medical and Chirurgical Faculty of Maryland has appointed a committee to secure funds to pay off the debt on the building and also for its endowment.

One Instead of Two Boards.—Dr. John McPherson Scott, Hagerstown, secretary, and Dr. Herbert Harlan, Baltimore, president of the Board of Medical Examiners, suggest the advisability of having one board for the state instead of two, as obtain under the present medical law.

Baltimore

Library for Sale.—The library of the late Dr. Edward Z. Cole, which is said to be a unique collection, is offered for sale at public auction.

Fire in Hospital.—A fire occurred in the operating room of the Church Home and Infirmary, September 25, due to an explosion of chemicals, but the coolness and promptness of the physicians and nurses prevented panic, and confined the damage within small limits.

Jail Hospital.—A new hospital has been built, occupying three floors of the administration building at the jail, for the use of sick prisoners. It was opened October 1, and is well equipped, with one ward provided for tuberculosis patients, and one for infectious diseases. Dr. G. H. Waltereck, assistant to the jail physician, is in charge of the hospital.

Alumni Reunion Planned.—The delegates of Johns Hopkins Medical School to the Hopkins Alumni Council have appointed a committee composed of Drs. Thomas R. Brown, J. H. Mason Knox, Joseph H. Pratt, and J. Hall Pleasants to arrange plans for a reunion of the medical graduates some time during spring next year. It is intended to form an alumni association at this time.

Faculty Changes.—The following faculty changes in the Maryland Medical College are announced: Dr. Alexander D. McConachie has been made professor of diseases of the ear, nose and throat; Dr. William S. Love, professor of therapeutics; Dr. Irvin Ebaugh, professor of materia medica; Drs. Josiah S. Bowen and Frank J. Powers, associate professors of diseases of the ear, nose and throat, and Dr. A. C. Beethan, dispensary physician.

Home from Europe.—Drs. William H. Welch, Henry O. Reik, A. J. Neilson Reik, William S. Thayer, Lewellys F. Barker, Harvey W. Cushing, John S. Fulton, Thomas C. Worthington, William T. Watson and W. P. Miller have returned from Europe, where they attended the recent International Medical Congress at Budapest.——Drs. Harry Friedenwald, Frank Martin, Lillian Welsh, Mary Sherwood, Ridgeley B. Warfield, Thomas S. Cullen and William B. Wolf have returned from Europe.

Medical Colleges Open.—The Maryland Medical College, Baltimore, opened October 1. The opening address was delivered by Dr. E. Miller Reid on "The Age in Which We Live."——The University of Maryland, School of Medicine, opened October 1.——The thirty-eighth annual session of the College of Physicians and Surgeons opened October 1.——The Woman's Medical College opened for its annual session October 1, and the Hospital of the Good Samaritan, which is connected with the institution, opened September 27, after having been closed for the summer.——Johns Hopkins Medical School opened for its annual session October 5.

Personal.—Dr. Adolph Meyer, professor of psychiatry in Johns Hopkins University, received the degree of LL.D. at the recent anniversary of Clark University, Worcester, Mass.——Dr. Felix S. Jenkins is seriously ill at the home of his daughter in Towson, Md.——Dr. B. Bernard Browne, professor of gynecology in the Woman's Medical College of Baltimore, has resigned.——Dr. B. Bernard Browne, professor of gynecology in the Woman's Medical College, has resigned.——Drs. William H. Welch, Henry O. Reik, J. Neilson Reik, William S. Thayer, Lewellys F. Barker, Harvey Cushing, John S. Fulton, Thomas C. Worthington, William T. Watson, Clements von Pirquet, and W. P. Miller have returned from Europe.——Dr. Samuel Wolman has been appointed by the faculty of Johns Hopkins Medical School to inspect the sanitary condition of the boarding-houses occupied by students of that institution.——Dr. Hyman M. Cohen, associate editor of the *Maryland Medical Journal*, has resigned to enter the medical reserve corps of the Army.——Dr. Ira Remsen, president of Johns Hopkins University, was given the honorary degree of LL.D. at the convocation of Harvard University, October 7.——Dr. George M. Smith underwent an operation at Johns Hopkins Hospital, October 8.

MASSACHUSETTS

New Hospital Opened.—The new hospital at North Reading, for the treatment of tubercular patients, was opened recently. The sanatorium is one of three to be established by the state in different sections.

Sanatorium Site Acquired.—The New Bedford Antituberculosis Society has acquired by purchase five acres of land in the north end of the city on which will be established a tuberculosis sanatorium.

Bequest.—By the will of the late Charles H. Draper, Brookline, $1,000 each is bequeathed to the Children's Hospital and the New England Hospital for Women and Children, Boston.——By the will of the late Katherine T. Buttrick, Lowell, a bequest of $20,000 is made to St. Johns Hospital, Lowell, and also one of $6,000 to maintain a free bed.——By the will of the late Albert T. Whiting, the first health officer of Boston, who died October 1, $4,500 is devised to the Children's Hospital, Boston.

Council Meeting.—The stated meeting of the Massachusetts Medical Society was held in John Ware Hall, Boston Medical Library, October 6. Dr. J. Bapst Blake, Boston, was elected delegate to the American Medical Association in place of Dr. John L. Morse, Boston, who resigned, as he desired to be more nearly identified with section work. Dr. Charles H. Cook, Natick, resigned from the committee on state and national legislation on his appointment as a member of the Massachusetts Board of Registration in Medicine, and Dr. David D. Scannell, Boston, was selected to succeed him. The following delegates to the American Medical Association were appointed for 1910 and 1911: Drs. Horace D. Arnold, Boston; Homer Gage, Worcester; Orlando J. Brown, North Adams, and alternate delegates, Drs. Frederick J. Cotton, Boston, Francis W. Anthony, Haverhill, and William A. Dolan, Fall River; and the following delegates to state societies: To Vermont—Drs. James H. Higgins, Marstons Mills, and Granville S. Allen, Lawrence; to New York—Drs. Samuel B. Woodward, Worcester, Frank A. Hubbard, Taunton; to Maine—Drs. Edward W. Taylor, Boston, and George Z. Goodell, Salem; to New Hampshire—Dr. Ernest S. Jack, Melrose; and to Connecticut—Drs. Frederick S. Ward, Springfield, and George P. Twitchell, Greenfield. It was voted that all fellows of the society who are members of any standing committee of the American Medical Association or of the National Legislative Council, and delegates or alternates to the Association be invited to all meetings of the Council of the Massachusetts Medical Society. This vote was passed with the object of more closely cementing the business aims and methods of the state organization and those of the American Medical Association, bringing about better understandings and results. It was also decided that the annual discourse, when delivered, should be the property of the state society. The council, taking up the matter of minority and majority reports of the committee on contract work, voted that the matter be indefinitely postponed.

MICHIGAN

Sanitation on Trains.—Dr. F. W. Shumway, Lansing, secretary of the State Board of Health, announces that he is about to call a meeting of the representatives of all railroads doing business in the state to discuss the provisions of the new law giving the board authority to require sanitary precautions on passenger trains for the protection of the public.

Hospital Opens Outdoor Department.—On September 8, Butterworth Hospital, Grand Rapids, established a free medical dispensary in the basement of the institution, with six rooms. The dispensary will be open from 12:30 to 2 daily. Mondays and Thursdays will be devoted to diseases of the eye, ear, nose and throat; medical and surgical cases will be cared for Tuesdays and Wednesdays and Fridays, and skin diseases will be treated on Saturday.

NEW HAMPSHIRE

McCormack in New Hampshire.—Dr. J. N. McCormack, chairman of the organization committee of the American Medical Association, began a campaign in New Hampshire October 3, and will visit all counties in the state.

State Sanatorium Opens.—The first patients to be received at Glencliff, the State Sanatorium for Tuberculosis, arrived September 11. The present capacity of the institution is forty patients, and examinations for admittance are to be held in Manchester.

Society Meeting.—At the annual meeting of Sullivan County Medical Society, held in Claremont, the following officers were elected: President, Dr. Edwin C. Fisher, Sunapee; vice-president, Dr. Fred P. Claggett, Newport; secretary, Dr. Emery M. Fitch, Claremont; treasurer, Dr. David M. Currier, Newport, and censors, Drs. Albion S. Marden, Newport, Oscar C. Young, Charlestown, and Henry C. Sanders, Claremont.

Money for Hospitals.—A legacy of $5,000 to the Mary Hitchcock Hospital, Hanover, is contained in the will of the late Stephen M. Crosby, Boston. The bequest is to endow a bed in memory of the testator's father, Nathan Crosby, preference to be given, if possible, to graduates of Dartmouth College.——Proceeds of a tag day, held in Portsmouth, August 7, for the benefit of the Cottage Hospital, are expected to amount to $2,000.

Crisis in Hospital.—As the result of trouble at Elliot Hospital, Manchester, between the medical staff and the matron, Drs. William M. Parsons, L. Melville French, George D. Towne, Henry D. W. Carvelle, Hosea B. Burnham, William H. Pattee, Charles F. Flanders, George M. Watson, Clarence W. Milliken, J. Franklin Robinson, David W. Parker, Arthur F. Wheat, Henry W. N. Bennett, Frank N. Rogers, Clarence O. Coburn, Ezra A. Jones, John C. O'Connor, and Emdon Fritz have resigned from the staff. The trustees have placed Dr. George C. Wilkins in charge of the medical and surgical department of the hospital, and Dr. Charles A. Sturtevant at the head of the maternity ward. These gentlemen have been authorized to choose assistants.

NEW YORK

Medical College Opens.—Albany Medical College enters on its seventy-ninth year, September 21. The introductory lecture was delivered by Dr. Frederick C. Curtis.

District Society Meeting.—The Sixth District Branch of the Medical Society of the State of New York held its third annual meeting in Oneonta, September 28. Dr. Frank DeW. Reese, Cortland, was elected president, and Dr. Herbert W. Fudge, Elmira, was reelected secretary-treasurer.

Railway Surgeons to Meet.—The New York and New England Association of Railway Surgeons will hold its nineteenth annual meeting at the Academy of Medicine, New York City, November 16 and 17. A symposium will be presented on "Causes of Railway Accidents Individualized."

New Tuberculosis Hospital.—The committee on tuberculosis hospital of the Ontario County board of supervisors has recommended the approval of the plans for the hospital, which call for a central building with wings attached, with open-air sleeping quarters. The institution is to be known as Oak Mount.

Open-Air Schools.—Rochester (N. Y.) has opened an open-air school for children suffering from incipient tuberculosis. Twenty children have been enrolled. They will have desks in a big tent, will be wrapped up warmly and will have their legs in bags to protect them from the cold.——Buffalo is also contemplating a similar school. School No. 14 has been designated as a school where the children of different mentality from those in all other schools will be taught by teachers especially trained for this purpose.

New York City

Clinic for Naval Surgeons.—At the invitation of the trustees of Roosevelt Hospital the surgeons of the German, French, English and Italian visiting warships attended a surgical clinic in the Syms operating theater of the hospital. The visitors were entertained by Dr. George E. Brewer and his associate, Dr. Charles H. Peck.

Returned from Europe.—Dr. Alexis Carel of Rockefeller Institute arrived home from Europe on October 1. During his stay in Paris he delivered several lectures on surgery.——Dr. William J. Robinson, Dr. and Mrs. Ludwig W. Kast, Dr. Smith Ely Jelliffe and family, Drs. Frederick Peterson, Frederick Earle Beal, and Valentine Mott have returned from Europe.

The Milk Essay Competition.—The department of health has received nearly one hundred essays in the prize competition on the care of dairy cows and the preparation of milk for the New York city market. The prizes will be finely bred dairy cows. Dr. Darlington has taken this way of interesting the milk producers in the New York City production territory in the requirements of the City Health Board. The prize essays will be distributed among the dairymen.

Health Home Closed.—This home at Coney Island has closed for the season after having given outings to 720 mothers and 1,652 children and day excursions to 1,652 mothers and 2,351 children. The Chappaqua Convalescent Home, the Children's Summer Home at Bath Beach, the Boy's Camp near Stamford, and the Martha Home at Ossining swelled the number of those cared for to 11,530. In addition the Sick Children's Mission treated more than 2,000 children in their homes in the city.

Bequests.—The will of Miss Phebe Ann Thorne gives the Home for Incurables $10,000; the Woman's Hospital, $10,000; the Society for the Relief of the Ruptured and Crippled, $10,000; the General Memorial Hospital, $10,000; the Manhattan Eye and Ear Hospital, $5,000; the New York Eye and Ear Infirmary, $5,000; the New York Skin and Cancer Hospital, $10,000; and the Colored Home and Hospital, $5,000.——Mrs. Emily A. Gere has bequeathed $30,000 in trust to a servant and the testator's niece, who will receive the income as long as they live, and at their death this money is to go to the St. Rose Free Home, a cancer hospital.

Medical Schools Open.—The entering class of the University and Bellevue Hospital Medical College promises to be larger than that of last year. Chancellor Henry M. MacCracken made the opening address to the students and announced that the Carnegie Laboratory would be enlarged at a cost of about $100,000. He also announced that the college had been the recipient of a bequest of $25,000 in a will not yet probated.——The one hundred and first annual session of the College of Physicians and Surgeons of Columbia University opened September 23, with an enrollment of 279. President Nicholas Murray Butler delivered the address of welcome, and Dr. Christian A. Herter, professor of pharmacology and therapeutics, spoke on "Imagination and Idealism in Medical Science."

OREGON

Eastern Oregon Physicians Meet.—At the annual meeting of the Eastern Oregon Medical Association, held in Pendleton, September 28 and 29, the following officers were elected: President, Dr. Robert E. Ringo, Pendleton; vice-presidents, Drs. Frank B. Kistner, Heppner, and E. O. Logan, The Dalles; secretary-treasurer, Dr. Roy C. McDaniel (reelected), Baker City; and censors, Drs. Thomas M. Henderson, Pendleton, Jacob Prinzing, Ontario, and Oliver M. Dodson, Baker City.

PENNSYLVANIA

Physicians Violate Law.—Sixty physicians of Schuylkill county were placed under arrest October 2 by Dr. R. J. Brauner, State Health Inspector, charged with the violation of the act which requires the recording of births within ten days. The defendants are among the most prominent physicians in the county.

Memorial Addition to Hospital.—Mrs. John T. Dyer has planned to erect a new wing at the Charity Hospital, Norristown, as a memorial to her late husband. One section of the new building will be used for the treatment of diseases of the eye, ear, nose and throat, and the other section of the building will be used for the care of medical and surgical cases.

Railroad Fatalities.—The Pennsylvania Railroad issued on October 9, statistics showing that the number of deaths due to trespassing on railroad property in the United States in the last ten years reached 47,416. The report shows that the number of persons injured aggregated 50,000. In 1898, the number of trespassers who lost their lives on American railroads was 4,063, five years later the number was 5,000, and in 1907 the number killed reached 5,612, or more than 15 a day. In 1899, 465 trespassers lost their lives on the Pennsylvania lines; in 1904, the number killed was 781, while in 1907 the fatalities reached 915, an average of almost 3 for every business day in the year. In the ten years prior to

Jan. 1, 1909, 7,240 persons were killed on the Pennsylvania system, and during the first six months of the present year, 285 trespassers were killed. The report shows that it is not only tramps who are victims, but men of the laboring class, factory workmen, their wives and children, who use railroad tracks as thoroughfares.

Philadelphia

Officers Elected.—The following officers have been elected to serve during the ensuing half year of the Southwark Medical Society: President, Dr. Max Staller; vice-president, Dr. Aaron Brav; secretary, Dr. Maurice B. Cooperman; treasurer, Dr. Nathan Blumberg.

Loving Cup for Dr. Dixon.—In appreciation of his splendid work in the State Department of Health, Dr. Samuel G. Dixon, State Health Commissioner, was presented with a beautiful silver loving cup by the county medical inspectors of the state and chiefs of the state tuberculosis dispensaries, at a meeting held in this city, October 5.

To Enlarge Hospital.—A contract has been awarded for the erection of a five-story addition, 25x78 feet, to the Samaritan Hospital at the northeast corner of Broad and Ontario streets. The new structure will be a modern fire-proof building, provided with dispensaries, wards and operating-room, and will be erected at a cost of several thousand dollars.

Personal.—Dr. Gerald O'Farrell was thrown from his carriage and sustained a fracture of the collar-bone, October 5. ——Dr. William E. Robertson has been appointed professor of theory and practice of medicine in the Medical Department of Temple University, vice Dr. Samuel Wolfe, resigned.——Dr. Howard S. Anders has returned from Europe.

The New Home of the College of Physicians to Open.—The new building of the College of Physicians at Twenty-second and Ludlow streets will be dedicated with appropriate ceremonies on Wednesday, November 10. Delegates and guests are requested to register as soon after their arrival as possible. Guests, officers and fellows will assemble at the First Unitarian Church, Twenty-second and Chestnut streets, at 2 p. m., and candidates for associate fellowship, the guests of the occasion and the officers of the college are requested to appear in academic costume.

State Health Inspectors Meet.—The second annual meeting of the county medical inspectors and chiefs of the tuberculosis dispensaries of Pennsylvania was held in this city October 5 and 6. The conference was called by Dr. Samuel G. Dixon, Harrisburg, the State Health Commissioner. One hundred and fifty physicians were in attendance. Tuberculosis and the latest methods of fighting it was the main theme of the various meetings. Every phase of the work of the State Health Department was discussed at an assembly meeting held in the Academy of Natural Sciences. Among the speakers were: Commissioner of Health of the State of New York Dr. Eugene H. Porter and the Commissioner of Health of New York City, Dr. Thomas Darlington. The meeting was also addressed by Surgeon-General of the Marine-Hospital Service Dr. Walter Wyman. The program further included clinics on tuberculous meningitis, by Dr. Joseph Sailer, in the Philadelphia General Hospital; surgical tuberculosis, by Dr. Robert G. LeConte, in the University of Pennsylvania Hospital; visceral tuberculosis, by Dr. James M. Anders, at the Medico-Chirurgical Hospital, and tuberculosis of serous membrane, by Dr. James C. Wilson, at the Jefferson Hospital. The conference came to a close by a luncheon given by Dr. Dixon at his country estate, Black Rock Farm.

SOUTH CAROLINA

Improvements in Medical College.—The Medical College of the State of South Carolina, Charleston, opened for the year October 4. A special course of five lectures on "Uncinariasis" is to be delivered by Dr. Charles W. Stiles, U. S. P. H. and M.-H. Service, in December. The college building has been remodeled since the close of the session in last May. An assembly hall takes the place of the old amphitheater, two additional lecture rooms have been constructed and a new physiologic laboratory has been provided and equipped.

Faculty Changes.—The Medical College of the State of South Carolina announces the following changes in its faculty: Dr. A. Robert Taft, lecturer on materia medica; Dr. E. H. Sparkman, assistant to the chair of pathology; Dr. Daniel L. Maguire, assistant in surgery; Dr. Richard M. Pollitzer, instructor in laboratory physiology; Dr. Thomas W. Reynolds, assistant to the chair of obstetrics; Dr. Charles A. Speisseger, assistant to the chair of chemistry; Dr. Francis L. Parker, Jr., lecturer on medical jurisprudence; and Mr. J. B. Hyde, assistant to the professor of pharmacy.

SOUTH DAKOTA

Personal.—Dr. Charles F. Holmes, Hecla, who was seriously injured in an automobile accident recently, is said to be convalescent.

State Medical Society Meeting.—The twenty-eighth annual session of the South Dakota State Medical Association was held in Aberdeen, September 29 to October 1. The following officers were elected: President, Dr. Thomas B. Smiley, Mount Vernon; vice-presidents, Drs. Hans M. Finnerud, Watertown, and William G. Smith, Sturgis; and secretary-treasurer, Dr. Robert D. Alway, Aberdeen. The next meeting of the society will be in Hot Springs.

TEXAS

Adjudged Insane.—Dr. William R. Mercer, Galveston, is said to have been adjudged not responsible and requiring restraint, September 11.

Found Not Guilty.—In the case of Dr. Hake, Hubbard City, charged with the illegal writing of prescriptions for alcoholic liquors, the jury at Hillsboro returned a verdict of not guilty, September 14.

Healers Must Be Licensed.—The attorney-general has furnished a ruling to a firm of physicians in Killeen, holding that magnetic healers come within the provisions of the "one board" medical act, and that any one practicing through magnetic healing, massage, manipulation of the body, etc., with a view of curing diseases, must have a license.

Medical Colleges Open.—The State Medical College, Galveston, opened October 1. Dr. Arthur E. Austin delivered the opening address on "The Doctor in Fiction."——The Southwestern University Medical Department, Dallas, opened without formal exercises September 29.——Baylor University Medical College, Dallas, opened with informal exercises September 29. The college occupies new quarters in the science building.

UTAH

Automobile Accident.—Dr. Frederick Stauffer, Salt Lake, and Drs. Amasa S. Condon, Ezra C. Rich and Robert S. Joyce, Ogden, were seriously injured, at Ogden, September 21, by the overturning of an automobile in which they were riding.

Smallpox.—Reports sent in to the State Board of Health state that in one small town in Rich county there are more than thirty cases of smallpox. These yearly outbreaks are said to be due to the local prejudice against vaccination.

State Society Meeting.—The fifteenth annual meeting of the Utah State Medical Association was held in Ogden September 21 and 22. The following officers were elected: President, Dr. Joseph S. Richards, Salt Lake City; vice-presidents, Drs. Amasa S. Condon, Ogden; Walter T. Hasler, Lehi, and Ernest D. Hammond, Salt Lake; secretary, Dr. W. Brown Ewing, Salt Lake; treasurer, Dr. James N. Harrison, Salt Lake; councilor and delegate to the American Medical Association, Dr. A. C. Bailey, and alternate delegate, Dr. Robert S. Joyce, Ogden. Salt Lake City was selected as the place of meeting for 1910.

VIRGINIA

Changes in Examining Board.—The following changes in the membership of the State Board of Medical Examiners are announced: First district, Dr. Joseph N. Barney, Fredericksburg; third district, Dr. J. E. Wright, Brook Hill; fourth district, Dr. Otho C. Wright, Jarratt; sixth district, Dr. Henry W. Dew, Lynchburg; seventh district, Dr. Philip W. Boyd, Winchester; and tenth district, Dr. Robert Glasgow, Lexington.

Medical Society Meeting.—At the fortieth annual session of the Medical Society of Virginia, held in Roanoke, October 5 to 7, the following officers were elected: President, Dr. Elliott T. Brady, Abingdon; vice-presidents, Drs. Walter A. Plecker, Hampton, James S. Irvin, Danville, and R. H. White, of the University of Virginia; secretary, Dr. Landon B. Edwards, Richmond (reelected); treasurer, Dr. Robert M. Slaughter, Theological Seminary (reelected); delegates to the American Medical Association, Drs. John S. Horsley, Richmond, Thomas C. Firebaugh, Harrisonburg, and William E. Anderson, Farmville, and councilors at large, Drs. Edward McGuire, Richmond, Richard W. Fry, Roanoke, Stephen Harnsberger, Catlett, M. M. Pearson, Bristol, George J. Tompkins, Lynchburg; first district, Dr. Clarence P. Jones, Newport News; second district, Dr. Edward E. Field, Norfolk; third district, Dr. Alfred L. Gray, Richmond; fourth district, Dr. Samuel A. Hinton, Petersburg; fifth district, Dr. Jesse M. Shackelford, Martinsville; sixth district, Dr. Sparrell S. Gale, Roanoke; seventh district, Dr. William P. McGuire, Winchester; eighth district, Dr. Tunis

C. Quick, Falls Church; ninth district, Dr. John T. Graham, Wytheville; and tenth district, Dr. Samuel H. Burton, Parnassus. An interesting incident of the session was the presentation of a purse of $1,000 in gold to Dr. Landon B. Edwards, Richmond, who has been secretary for many years. The presentation was made by Dr. Paulus A. Irving, Richmond. It was decided to increase the dues of the society from $2 to $3 per annum. A resolution was passed endorsing the senate bill to increase the salary of the Public Health and Marine-Hospital Service. The next meeting is to be held in Norfolk.

WISCONSIN

Personal.—Dr. A. Hamilton Levings, Milwaukee, has returned from abroad.——Dr. J. M. Beffel, Milwaukee, secretary of the Wisconsin State Medical Society, who was arrested for leaving his automobile standing in front of his home in Milwaukee, in violation of a city ordinance, was found not guilty.

Pasteur Institution.—Final arrangements are being made by the State Board of Health to establish an institute for the treatment of hydrophobia in connection with the state hygienic laboratory, Madison. Treatment will be given free of charge to indigent persons, but a small amount will be charged persons who are able to pay for the treatment in order to make the work as nearly self-supporting as possible.

Antituberculosis.—The Antituberculosis Association of Wisconsin is thoroughly organized and promises a vigorous campaign on the lines of increasing membership, raising of funds, promoting bills in need of legislation, and direction of sanatoria in different parts of the state. Prof. W. D. Frost, Wisconsin University, who has written and lectured extensively on tuberculosis, is president of the association, and Lester W. Hutchcroft, of the State Board of Health, is secretary.

GENERAL NEWS AND COMMENT

Anderson Made Chief of Hygienic Laboratory.—Passed Assistant Surgeon John F. Anderson, P. H. & M.-H. Service, has been appointed director of the hygienic laboratory of the service, vice Surgeon M. J. Rosenau.

Personal.—Dr. C. A. Dawes, M. R. C. U. S. Army, was taken ill with appendicitis while on a practice march from Fort Perry, Ohio, to Fort Thomas, Ky., October 1.——Dr. John Mason Little, Jr., Boston, narrowly escaped death in the wreck of the Princeton mission boat, *Andrew J. McCosh*, in the straits of Belle Isle, Sept. 12, but was rescued by Dr. Grenfell.

Medical Officer May Command Ship.—The attorney general has handed down an opinion to the secretary of the navy that he has authority to assign a medical officer not below the grade of surgeon to the command of a naval hospital ship. This decision has been made in view of the expected commission of the hospital ship, *Solace*, for which the Chief of the Bureau of Medicine and Surgery desires to ask the detail of a member of the medical department as commanding officer.

Conference on Prevention of Infant Mortality.—The American Academy of Medicine, at the mid-year meeting, will hold a conference on the prevention of infant mortality at New Haven, Conn., November 11-12. The first session will consider the "Medical Prevention of Infant Mortality;" the second will take up the "Philanthropic Prevention of Infant Mortality;" the third will deal with the "Institutional Prevention of Infant Mortality;" and the fourth will be devoted to discussion of the "Educational Prevention of Infant Mortality."

Postponement of International Congress of School Hygiene.—The third international congress for school hygiene, which was to have been held next March, has been postponed until August 2 to 7, 1910, in order to give more importance to the exhibition to be attached to the congress. A pamphlet of 60 pages, giving the details of the congress, will be sent on demand to the secretary, Dr. Dufestel, 10 Boulevard Magenta, Paris, France. The honorary president of the committee of propaganda in this country is Dr. A. T. Cabot, of Boston, with Dr. J. H. Musser, of Philadelphia, as president, and Dr. T. A. Storey, of Boston, Mass., as secretary and treasurer.

Military Surgeons' Meeting.—At the eighteenth annual meeting of the Association of Military Surgeons of the United States, held in Washington, October 5 to 8, the following officers were elected: President, Colonel Joseph K. Weaver, N. G. Pa., Norristown, Pa.; first vice-president, Colonel William C. Gorgas, M. C., U. S. Army, Ancon, Canal Zone, Panama; second vice-president, Surgeon Charles P. Wertenbaker, P. H. & M.-H. Service, Norfolk, Va.; third vice-president, Surgeon William C. Braisted, U. S. Navy, Washington, D. C.; secretary, Major Charles Lynch, M. C. U. S. Army, Washington, D. C.; and treasurer, Major Herbert A. Arnold, N. G. Pa., Ardmore, Pa. It was decided to hold the 1910 meeting in Richmond, Va.

Prevention of Contamination of Vegetables.—It is interesting to note that supervision of vegetable gardens is suggested in San Francisco as necessary to prevent the contamination of their products with amebas from the human excrement used as a fertilizer by the Chinese gardeners. According to H. W. Austin (*Public Health Reports*, Sept. 24, 1909), of 55 cases of amebiasis occurring in the Marine Hospital at San Francisco from Dec. 1, 1908, to Aug. 9, 1909, 16, it is believed, originated in California. It has been decided by the San Francisco board of health to declare amebic dysentery an infectious disease and require it to be reported. The occasional occurrence of this disease in the Northern states indicates that precautions to prevent its spread would not be untimely.

Appeal for Data in Regard to Influence of Roentgen Exposures on Growth.—In experimentation on young animals, the Roentgen rays have displayed a detrimental influence on the growth, and the German Roentgen Society is now making a collective inquiry to determine whether this occurs also in children exposed to the rays. The question blank sent out by the society asks the number of children thus treated, age, region exposed, pathologic reason for the exposures, length of exposures, soft or hard tubes (5-7 Wehnelt or 7.5 to 9 Wehnelt), year of exposure, number of children examined since, and, if any evidence of interference with growth was detected, details of such influence. The interference with growth may not become apparent until after a number of years, so all children exposed at any time should be included in the investigation. On suspicion of checked growth of the extremities, comparative skiagraphs and measurements should be made. Replies may be sent to Dr. Försterling, Mors, Rheinland, Germany, chairman of the committee in charge of the inquiry, or to Prof. P. Krause, Bonn, president of the Röntgengesellschaft.

The Far-Eastern Association of Tropical Medicine.—The Far-Eastern Association of Tropical Medicine will hold its first meeting in Manila, March 14, 1910. This association was formed two years ago by representatives from Japan, China, Siam, the Straits Settlements, Ceylon, Hongkong, French Indo-China, and the Philippine Islands, present at a meeting of the Philippine Islands Medical Association. Dr. Paul C. Freer, of Manila, was elected president and Dr. Francis Clarke of Hongkong, general secretary. The Governor General of the Philippine Islands subsequently invited the representatives of the various governments within the territory of the association to send delegates to the first meeting to be held in Manila. Cordial adherence to the purposes of the association was expressed by all who were so addressed and active interest in the formation of the various sections was manifested. The government of the Philippine Islands made an appropriation to cover the expenses of the meeting and a preliminary program of sessions was issued. The sections are divided as follows: protozoology and helminthology; cholera, plague and leprosy; surgery and obstetrics; diseases of children; fevers in the tropics, including malaria, typhoid, etc.; dysenteries; beriberi; tuberculosis; climate, hygiene and sanitation. The first six sessions will be held in Manila, the remainder at Baguio, the summer capital of the islands, in the Benguet Mountains. The new government hospitals and the new buildings of the Philippine Medical School will be dedicated at the time of the meeting. The interest manifested by the various countries in the Far East, and the replies already received insure papers of the highest class and a large attendance. The meeting will be held during the best time of the year. The opportunity for seeing Manila and its various modern scientific institutions, as well as portions of our Philippine possessions under the best auspices, will be unexcelled. Physicians making the journey to Japan or around the world can easily arrange the short side trip from Hongkong to Manila. Steamship communication between the two ports is established by the regular Hongkong-Manila lines twice a week and by the vessels of the North German Lloyd's Australian line, the Nippon Yusen Kaisha and the China and India Navigation Company; the Australian boats are all of good size and of the best class. The large vessels of the Pacific Mail now also stop at Manila, going to the latter port direct from Japan. The workers in medical science in the Far East have made such rapid advances in the past few years that encouragement of their new venture, which has for its purpose the advancement of medical research in this most important area of the world, would most certainly reflect credit on the medical profession as a whole. Interest in tropical medicine is increasing rapidly in this country and the time is not far distant when chairs of Tropical Medicine will be established in some of our medical schools. There is no better way to acquire a knowledge of the work to be undertaken than by sending representatives to this meeting, and it is hoped that some of our larger institutions may be able to do this.

CANADA

Tuberculosis Sanitaria.—The Ontario government was recently asked to erect, equip and maintain, by a large provincial delegation of medical and laymen, sanitaria for indigent and other consumptives. In replying to the propositions of the delegation the premier, Sir James Whitney, stated he would be in favor of withdrawing the annual provincial grant to those general hospitals throughout the province which refused to take such patients. The premier thought that there was too much "scare" about consumption, but promised that the proposals of the deputation should receive the careful consideration of his cabinet.

Public Health in Montreal.—Montreal is engaged in municipal reorganization and there is now a movement on foot to have the department of health controlled by five physicians, who shall be paid an annual salary for their services. A health committee composed of aldermen, oftentimes new at that, is not by many considered satisfactory, as they have no knowledge of medical matters.——Public vaccination has been resumed in Montreal after a discontinuance of several days. Two children who had been vaccinated had died of tetanus and the provincial board of health were required to test the vaccine. Careful tests failed to discover anything wrong with the vaccine.

Hospital News.—The Protestant Hospital for the Insane at Verdun, Quebec, has just completed a new wing for the accommodation of 150 patients. There are at the present time 614 patients in this hospital.——The Montreal General Hospital will shortly commence the erection of a new pathologic department, which will not be surpassed by any similar one on this continent. A large addition to the main hospital building is also being projected. A bond issue of $200,000 for the purpose has been ordered. During the past six months 1,567 patients were treated indoors; in the outdoor, 25,063. During that period legacies had been received to the amount of $7,700. The income was $59,059 and the disbursements amounted to $65,245.

Interprovincial Registration.—This subject was discussed at a special meeting of representatives of the four western Canadian provinces, Manitoba, Saskatchewan, Alberta and British Columbia at Banff, Alta., on the 28th. Dr. Spankie, a member of the Ontario Medical Council, was present, which shows that the Ontario Medical Council is at last awake to the advantages of having interprovincial reciprocity with these provinces. A meeting of the executive council of the Canadian Medical Association is to take place at Toronto on the 11th inst., when a special committee will be appointed on dominion registration; and the provincial medical councils will be asked to appoint a representative on this special committee. The feeling is such amongst the medical profession of Canada at the present time, that it is thought that dominion registration will very soon be an established fact. It is expected that some new legislation will be enacted at the coming session of Parliament which will pave the way for dominion registration.

Personal.—Dr. Thomas G. Roddick, Montreal, sailed from Rotterdam on the 2d of October.——Drs. Alexander McPhedran, W. Henry B. Aikins, Herbert J. Hamilton and Herbert A. Bruce, Toronto, have returned from attending the International Medical Congress at Budapest.——Drs. Richard A. Reeve and Perry G. Goldsmith, Toronto, are in New York.——Dr. Robert H. Craig, Montreal, has returned from Europe.——Dr. Walter H. McKeown, Toronto, after attending the Canadian Medical Association at Winnipeg, returned home, going around via Vancouver, San Francisco, Denver and Chicago.——Dr. William A. Young, Toronto, managing editor of the *Canadian Journal of Medicine and Surgery*, whilst abroad in Europe, was elected president of the American Medical Editors' Association.——Drs. D. J. Gibbs Wishart (chairman), Allen M. Baines, James F. W. Ross, Charles J. Hastings, R. W. Bruce Smith, the president, Dr. Adam H. Wright, and General Secretary Dr. George Elliott are the committee of arrangements for the forty-third annual meeting of the Canadian Medical Association to be held in Toronto on the 1st, 2d, 3d and 4th of June, 1910.——Dr. John N. E. Brown, superintendent of the Toronto General Hospital, and Dr. R. W. Bruce Smith, inspector of hospitals for Ontario, have returned from attending the meeting of the American Hospital Association in Washington, D. C.——Dr. Brodie, the new professor of physiology in the medical department of the University of Toronto, delivered the opening lecture of the medical session this year.——Dr. W. O. Walker has been appointed associate professor in Queen's University, Kingston.——Dr. S. E. Wolbach has been appointed director of the histologic laboratory of McGill University.

FOREIGN

A Physician Made Governor in Siberia.—The large peninsula of Kamchatka, in northern Siberia, has recently been organized into a separate territory, and a physician, Dr. W. Perfiljew, installed as the first governor.

London School of Tropical Medicine.—This institution is to be formally opened Tuesday, October 26. The American ambassador has promised to preside at the opening meeting and an address will be delivered by Dr. Osler. At the school dinner which is to be held at the Savoy Hotel the same evening, Dr. A. G. Bagshawe, director of the Sleeping Sickness Bureau, will preside.

The International American Congress of Medicine and Hygiene.—This congress will be held at Buenos Ayres, May 25, 1910, during the celebration of the centennial of the independence of the Argentine Republic. An international exposition of hygiene is also to be held in connection with the congress, to remain open for six months. Details of the congress, rates, etc., may be obtained from the general secretary, Luis Agote, Medical Faculty, Buenos Ayres, Argentine Republic. There are nine principal sections, including one on sanitary technology, veterinary police, and dental pathology, in addition to the sections on medicine, surgery, biology and public hygiene. The dean of the medical faculty, E. Canton, is president of the organizing committee. Among the special subjects to be discussed are the raising of the standards for medical education, subtropical pathology, hygiene and prophylaxis, malaria and tuberculosis.

The Mexican Prophylactic Society.—The first anniversary of its foundation was recently celebrated by the Mexican *Sociedad Sanitaria y Moral de Profilaxis de las Enfermedades Venereas*, and the work of the year reviewed. A Spanish translation of Fournier's pamphlet, "For Our Sons When They Are 18," was published by the society and large numbers distributed; a second edition was published at the expense of the national army and navy department, and a third edition by the department of agriculture. Regular monthly meetings have been held at Mexico City and various problems of moral prophylaxis discussed, the reports with other original articles appearing in the *Cruz Blanca*, the organ of the society. A special free dispensary for men with venereal diseases has been opened, and lectures have been delivered in the law and engineering schools on the dangers of venereal disease. Dr. J. G. Uruena of the City of Mexico is secretary of the new society.

Prizes Awarded at the International Medical Congress.—As already mentioned, the trachoma prize was not awarded, but the $1,000 prize founded in 1897, by the City of Moscow, was given to O. Hertwig, professor of anatomy and comparative embryology at Berlin, and one of the publishers of the *Archiv für mikroskop. Anatomie und Entwicklungsgeschichte*. The City of Paris prize of $600 was awarded to the serologist, J. Bordet, of Brussels, of complement-deviation fame. The Lenval prize of $80 was divided between Prof. H. Neumann, of Vienna, and Dr. A. Grey, of Glasgow, at the international otology congress which also met at Budapest. It was decided that the international medical congresses should henceforth not be held oftener than once in four years, so that the next congress will not convene until 1913, when it will meet in London. The international committee appointed to prepare the preliminaries for the international medical congresses in future is to have its headquarters at the Hague, near which the secretary, Prof. K. Wenckebach, resides. The members of the committee are Professor Pavy of London, Blondel of Paris, as president and vice-president; the latter is also secretary of the International Medical Press Association. Maragliano of Genoa, Müller of Budapest, and Waldeyer of Berlin. An international association for the study of epilepsy was also organized before the close of the congress, about thirty members forming the provisional international board, including Obersteiner, Oppenheim, Tamburini, Donath and Turner.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Oct. 2, 1909.

Campaign Against Nostrums

It seems that at last the government is waking up to the evils of the unrestricted sale of nostrums in this country. Some time ago, as reported in a previous letter, the General Medical Council appointed a committee to consider the question of unqualified practice, and this body began by investigating the regulations for the control of such practice which exist in other countries. A most valuable and exhaustive report on these regulations was presented to the privy council and the government has decided next session to appoint a

royal commission to consider the sale of nostrums. It is thought that this commission is likely to recommend legislation similar to that which exists in many other countries, that the vendors of nostrums will be compelled to disclose on the label the ingredients which enter into their composition. For some time the *British Medical Journal* has been publishing in a series of articles the composition of all the nostrums in the market and the cost of the ingredients. Preparations which are claimed to be infallible cures for all sorts of ailments are shown to be composed of very ordinary ingredients which cost a minute fraction of the price asked. The extent of the nostrum evil in this country is shown by the following figures: Every article sold must bear a government stamp for the year ending March 31, 1908. The revenue derived from these stamps amounted to $1,600,000; the number of articles stamped was 41,757,575, for which it is estimated the public paid $12,000,000. The struggle is certain to be a long and difficult one. The large financial interests involved will obtain very powerful support in several directions. Extensive advertising has rendered the lay press very subservient; even leading journals are not ashamed to publish puffs disguised as editorials. In attacking the nostrum evil another form of opposition will also be encountered. All the various cranks—antivivisectionists, antivaccinationists, Christian scientists, etc.—who entertain extreme views on the liberty of the subject, will oppose any state interference with the sale of nostrums and will represent it as being purely in the interests of the medical profession.

Beriberi in England

At Newcastle-on-Tyne as many as 25 cases of beriberi have been reported. They occurred among the men of the Brazilian warship *Barossa*. One death has occurred, 4 patients have been discharged, and 20 remain in the hospital. The cases bear out the rice hypothesis of the disease, for the Brazilians are rice eaters and the patients had eaten this food three times a day. The health officer, Dr. Harker, has expressed the view that the spread of the disease was due to the sailors converting the forecastle into an incubator by closing the ventilators and lighting stoves.

Malaria Prevention in India

The government of India has decided to take vigorous steps for the prevention of malaria and has ordered a conference to be held on the subject at Simla on October 11. Discussing the question in the *Times*, Major Ross thinks that for rural areas quinin prophylaxis, assisted if possible by screening, is the best measure. For towns and crowded areas opinion is divided; some advocate the same measures here also but others prefer mosquito reduction. The latter has the great advantage that it tends to reduce other mosquito-borne diseases, such as filariasis, which abounds in parts of India. On the other hand, quinin prophylaxis has many disadvantages. Merely to sell or give quinin at dispensaries and post-offices is not sufficient, because the poor cannot afford the time to attend constantly for small doles of the drug. For this measure to be effective the drug must be distributed gratis from house to house for long periods and the occupants must be urged to take it. Some writers claim, however, that in India quinin prophylaxis is cheaper than mosquito reduction. But if this be true for rural areas it is not so for crowded ones.

Malaria Prevention in Sierra Leone

Sierra Leone, which well earned the sobriquet, the "white man's grave," is rapidly losing its reputation. Since the discovery that malaria is due to mosquito bites that scourge has considerably abated. Both Europeans and natives have taken the truth to heart and now take precautions against malaria and other tropical diseases, which were formerly undreamt of. The inhabitants of Freetown (which comprises about one-third of the population) view mosquitoes as bad animals like snakes. The housewife regards the health officer as a friend and does her best to keep her "compound" free from stagnant water. In 1907 the deaths in Freetown from malaria numbered only 202 and last year they dropped to 150. To stimulate the native chiefs to take an interest in sanitation the government offers the prize of a handsome sword to the two chiefs in each district which show the greatest improvement in sanitation. This has proved most effective.

Accident or Disease?

The Workmen's Compensation Act has caused many difficulties in deciding whether the disability of a workman is due to accident or disease. The following case is a new illustration: In 1907 a carpenter was awarded $5 a week compensation from his employer because of an injury to his left arm which was supposed to have produced dislocation of the ulnar nerve. About a year after the accident similar symptoms appeared in the right arm, and it was discovered that the case was really an example of syringomyelia. As medical opinion was given that the disease had nothing to do with the accident the employer applied to the court for an order to stop the payments. A physician at the hospital in which the patient was treated gave evidence in support of the application, but the resident medical officer of the same institution gave evidence that cases of syringomyelia due to injury had been recorded. In view of the difference of medical opinion the judge would not interfere with the award.

Health Visitors

A remarkable development in sanitary administration in recent years has been the appointment of women as sanitary inspectors and still more recently as "health visitors." Health visitors originated in the voluntary efforts of societies of philanthropic women to improve the sanitary condition of the poor by visiting their houses and instructing them in personal and domestic sanitation. The government has now decided to appoint paid health visitors and has issued regulations on the subject. A woman may qualify herself as a health visitor in five different ways, (1) as a qualified medical practitioner, (2) as a trained nurse, (3) as a certified midwife, (4) by undergoing a course of instruction in a hospital and holding in addition the certificate of certain bodies such as the Royal Sanitary Institute, or (5) by holding some post under a sanitary authority in which she has discharged duties likely to qualify her for the post of health visitor. Health visitors must submit their books when required to do so to the sanitary authority or health officer. The salary will be $500 per annum.

Health of the Navy

The reports on the health of the navy in 1908, which have just been issued, show continued improvement. Not only are the case, invaliding, and death rates lower than the average for the last five years, but the average loss of service per capita has dropped from 11.28 to 10.36 days. The total force was 109,210 and the total number of cases of injury and disease 75,608, which gives a rate of 692 per 1,000, being a decrease of 53 as compared with the average of the preceding five years. The conditions of work in the engine-rooms and stokeholds are the subject of an interesting report by Staff-Surgeon Rees. In regard to heat stroke, he finds that the negro not only has an advantage over the white man in the sun but also in the stokehold. In the sun the lesser diathermacy of his dark skin is an advantage; in the stokehold his skin radiates heat better than the white man's. It is curious that workers in the bunkers are not more liable to heat stroke than those engaged in firing the furnaces, for the bunkers are often much hotter than the stokeholds, while the air in them is often motionless. The explanation appears to be that the stoker working in the bunkers is at once covered with a layer of fine coal dust, which radiates heat much faster than the uncovered body. The best treatment of heat stroke is found to be iced baths.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 29, 1909.

Preserved Foods

At the annual session of the German Public Health Association (*Deutsches Verein für öffentliche Gesundheitspflege*), held at Zürich early in September, Professor Schottelius gave an address on "Preserved Foods as Popular Diet." While fully recognizing the value of preserved foods in cases in which suitable fresh nutriment cannot be procured or only with great difficulty, he laid great emphasis on the fact that fresh food is more wholesome and more nutritious. In the process of artificial preservation changes occur in the natural composition of the foodstuffs and constituents are lost that are of great importance for the digestion and utilization of the food in the body. In his opinion, preserved foods can be dispensed with in all civilized countries with a temperate climate, as at all seasons a sufficient supply of fresh and well keeping foods is available at low prices. Foods preserved in tins are not to be recommended for general consumption, as there is no sufficient security that they will always meet the demands of hygienic safety, especially as there is nothing to show when the goods were put up.

Night Prices of Druggists

Some time ago permission was given to pharmacists by the Department of Education to add 50 per cent. to the price of medicine delivered at night. At the meeting the German Pharmaceutical Association (*Apotheker-Verein*) held a

week ago, it was proposed that this rule should be effective from 9 o'clock in the evening to 7 in the morning, instead of, as hitherto, till 6 a. m. In this way the pharmacist will be still further protected against disturbance of his night's rest. Besides this, an increase in the price of medicines corresponding to the cost of labor is demanded, as the prices heretofore in vogue are not sufficient to meet the demands of the steadily increasing cost of living.

Treatment of Hydrophobia

From a report of the Ministry of Education (*Kultusministerium*) it appears that in 1908 in Prussia 295 persons were injured by animals either rabid or suspected of rabies. Of these persons 279 submitted to the Pasteur treatment. (There is a Pasteur institute in Breslau and one in Berlin.) Of the 279 who were inoculated 2 died and of 16 who were not treated 1 died. In 1907, of 382 inoculated, 2 died; in 1906, 4 out of 342; 1905, 3 out of 322; 1904, 5 out of 330; 1903, 4 out of 281. If only those who were bitten by an animal known to be rabid are considered, 2 of 190 inoculated died in 1908, 2 of 266 in 1907, and 4 out of 236 in 1906.

Birth-rate of Various Nationalities

In an article awarded the prize and published by the Bavarian national statistical bureau on the fertility of different civilized countries, the following figures show a steady decrease in the fertility of married women during the three decades ending in 1905, and also for most countries a decrease in the number of illegitimate births. Among 1,000 married women of the ages from 15 to 50 there occurred of legitimate births:

	1876-1885	1886-1895	1896-1905
In the German Empire	268	258	243
In Prussia	273	265	250
In Bavaria	276	263	259
In Saxony	267	250	216
In Würtemberg	288	259	262
In Baden	266	248	251
In Austria	246	250	...
In Hungary	234	224	...
In Italy	248	249	232
In Switzerland	239	230	...
In France	167	150	134
In England and Wales	250	229	203
In Scotland	271	255	235
In Ireland	250	245	254
In Belgium	264	236	214
In the Netherlands	293	286	272
In Denmark	244	235	217
In Sweden	240	231	...
In Norway	262	259	...
In Portugal	...	235	...
In Finland	259	246	...
In Servia	...	237	...

The low birth-rate of France is remarkable, and in the last decade that of England and Wales has shown the nearest approach to it. The low figure for Belgium is in striking contrast to that of the neighboring kingdom of the Netherlands, where for the three decades the maximum of fertility among married women has been observed. In the German empire the legitimate fertility has been most reduced in Saxony, while, on the other hand, in regard to illegitimate births, Saxony has held the first place among the countries named, being passed by Hungary only in the decade 1886-95. If these countries are arranged according to the illegitimate births registered during the last decade (for every 1,000 unmarried women from 15 to 50 years) the order will be shown by the following table:

	1876-1885	1886-1895	1896-1905
In the Kingdom of Saxony	47	44	41
In the Kingdom of Bavaria	42	39	37
In the German Empire	28	27	26
In Würtemberg	29	27	25
In Denmark	26	24	23
In Prussia	25	24	22
In Baden	22	20	20
In Italy	24	24	19
In France	16	17	18
In Belgium	19	17	17
In Scotland	20	17	13
In England and Wales	13	10	8
In the Netherlands	9	9	6
In Ireland	4	5	3

The Cholera Situation

Cholera in Holland is apparently extinguished. In Russia it has been greatly reduced, but is still present. According to the latest available official report, 858 persons were attacked in the week from July 5 to 11, of whom 384 died. Of these 493 were attacked and 229 died in St. Petersburg and its suburbs. That there is a certain danger for us is shown by the fact that a few days ago cholera appeared in a small place in East Prussia in a raftsman and his wife lately returned from Russia. The raftsman died but the wife is convalescing. Naturally the necessary preventive measures have been taken by the Prussian authorities. The change that has taken place in public sentiment in regard to cholera is shown by this circumstance. Twenty years ago these two cases would have created a panic, not only in Prussia but in the whole population of Germany, while now the report of such an attack of cholera is received with the same equanimity as if the cases were cases of typhoid or other infectious disease.

Painless Tooth Extraction

One of our dentists has recently learned that he cannot with impunity advertise to extract teeth without pain, as dentists are accustomed to advertise in the newspapers and on the billboards. He was convicted of an offense against the law regarding improper competition. The plea of the convicted man on appeal that it had not been shown that his patients felt any pain on extraction of teeth was rejected on the ground that, according to the opinion of experts, it was not always possible to guarantee a painless extraction of teeth.

Orthopedic Instruction in Public Schools

For the prevention of spinal curvature orthopedic instruction is to be introduced into the Berlin public schools for such children as show an improper carriage. If the trouble is more advanced the children must be transferred to an orthopedic institute. A commission composed of teachers and physicians is to determine the necessary means.

Distraining of a Patient by a Physician

In the last few days the distraining of a patient by a physician has become a cause célèbre. Both the public and the daily press have busied themselves with the affair. A very well dressed Russian lady entered the office of the well known ear specialist privat docent Dr. Jansen, and at the end of the consultation, in place of the usual fee of $5.00 (20 marks), expressed the wish to pay temporarily only $1.50 (6 marks), because, as she claimed, she had no larger sum with her. The doctor, irritated on account of previous unfortunate experiences, seized the valuable ear-trumpet of the patient, locked it in a closet and declared that she should recover it only on payment of the remainder of the fee. The public has become greatly excited at this alleged inhumanity of the doctor. Dr. Jansen has stated in an interview that he has been cheated out of about $12,000 (50,000 marks) by Russian patients. It has repeatedly happened to him that patients have acted as did the woman referred to; they have paid less than the usual fee as an installment and have disappeared, never to be seen again. It is easy to see that the doctor wished to make an example to guard himself against further imposition. It may be admitted that he could have chosen a more appropriate object to distrain but that is not essential. It may be assumed as very probable that this patient, instructed by her compatriots, had intended to plunder the doctors, for it is not to be supposed that a lady would go on the street in a foreign city with the small sum of 6 marks and further that the usual fee of a specialist should be unknown to her. While the whole affair, with its publicity, may be unpleasant to the doctor, it will have the desirable result for him that Russian ladies who visit his office in future will provide themselves with the necessary fee.

Occurrence of Epidemic Cerebrospinal Meningitis in Prussia in 1908

In 1908, 1,284 cases of epidemic cerebrospinal meningitis were reported as opposed to 2,591 in the previous year. The largest number occurred in the Rhine province (459), next in Westphalia (323), and in Silesia (177). The largest number occurred in spring (609), than in winter (353). Of those attacked in 1908, 738 (57.6 per cent.) were males, 544 (42.4 per cent.) females, 973 (76 per cent.) were children from one to fifteen years, and the mortality was 713 (56.2 per cent.). The mortality has steadily diminished since 1904, a fact which is attributed by the official report to the increased use of serum therapy. The highest per cent. died in the first week after the attack.

Severe Diabetes After Injury to the Head

Prof. v. Noorden has furnished to the imperial insurance office an interesting report on the etiologic connection between an injury and a severe diabetes mellitus which ran its course to a fatal termination in about ten months. A laborer received a severe blow on the head from a heavy piece of iron which was followed by a nosebleed, giddiness and temporary confusion. About three months after the accident a severe diabetes began which ran a very rapid and fatal course. The occurrence of nosebleed indicates, according to v. Noorden, an injury to the bones of the base of the skull. While the trauma was not great, concussions of the brain without anatomic

lesion are, however, the most frequent causes for the origin of traumatic diabetes. In consideration of the fact that he has never seen a slowly developing and latent diabetes suddenly develop in an otherwise vigorous man to an especially severe diabetes, v. Noorden comes to the conclusion that the diabetes was produced by the accident. The imperial insurance office has therefore awarded to the survivors of the unforunate man the required income.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Oct. 1, 1909.

A Delicate Problem of Ethics Before the Society of Legal Medicine

During one of the last sessions of the Society of Legal Medicine (*Société de médecine légale*) Dr. Siredey, physician of the Hospitals of Paris, placed the following case before the society and asked its advice. A young physician had observed, within a very short period of time, two cases of poisoning of therapeutic origin, due to a single colleague, who, being very imperfectly acquainted with quantitative dosing, had prescribed 40 drops of tincture of digitalis for an infant of 4 months and 40 gm. (30 scruples) of syrup of narcein (one of the alkaloids of opium) for another of 7 months. In both cases death took place within twenty-four hours. It appeared that this physician ordinarily gave excessive doses to children and that the pharmacists of the quarter, for fear of accidents, generally replaced the drugs called for in the prescriptions by other anodynes. The physician in question had been warned of the results of his prescriptions and had replied that he knew what he was about and needed no advice.

What ought to be the conduct of the physician who had discovered these cases of poisoning? Did not his silence run the risk of making him an accomplice? Dr. Siredey did not wish to advise his young colleague to become an informer but he asked if the physician whose official duty it was to record deaths (*médecin de l'état civil*) should not be notified. It might also be asked whether, to prevent the recurrence of such accidents, the question should not be placed before the "family council" (*conseil de famille*) of the medical society of the *arrondissement* where the incidents occurred. This interesting case gave rise to very warm debates. According to Dr. Balthazard, professor *agrégé* at the Paris medical school (*faculté de médecine de Paris*) the physician who observed the poisoning ought to tell the family that the child was poisoned. If the fault had been committed by a charlatan, one would not hesitate to denounce him; and because a colleague is in question one has not the right to keep silence. Dr. Chassevant, another *agrégé* of the Paris medical school, thought that the physician who observed the mistake ought not to incite the family to prosecute his colleague, but should warn the *médecin de l'état civil* under sealed cover. This was the course proposed by Siredey and the president of the society and approved of by Dr. Granjux, who considered denunciation of the physician not only blamable itself, but also dangerous; for if the physician who caused the poisoning was acquitted by the courts, could he not then turn on his accuser and prosecute him in his turn? A third opinion recommended complete silence. Dr. Descouts believed that the physician who observed the poisoning ought not to warn the public physician, even indirectly, for according to law it is the duty of the latter to ascertain the cause of the death. He may, for example, demand that the prescriptions be furnished him, and thus he will be able to observe that excessive doses have been prescribed.

An interesting point to which Dr. Chassevant drew attention is the complicity on the part of the pharmacist in such cases. The latter is culpable in habitually replacing the dangerous prescription by anodynes which may have led the physician to persevere in his course by causing him to believe that what he was prescribing was not toxic. The duty of the pharmacist is to report to the physician his slips of the pen. Unfortunately, too many pharmacists turn the filling of prescriptions over to apprentices who are not competent to appreciate when a dose is excessive. Dr. Briand cited a case which well shows the unfortunate consequences which may result from the precaution taken by certain pharmacists of diminishing the prescribed dose. A patient was taking arsenic in pills. The pharmacist, finding the dose too strong, reduced it just in proportion as the physician increased it. One day a new apprentice filled the prescription according to order and the patient was poisoned.

Have Physicians the Right of Concerting to Refuse Their Care to a Patient?

In one of my preceding letters (THE JOURNAL, Jan. 16, 1909, lii, 223) I mentioned an interesting decision of the civil court of Châteauroux, to the effect that physicians had the right to refuse their attentions except when legally ordered and that such refusal gave no ground for an action for damages. But another question was also raised in this case—the physician's right to warn his colleagues that the patient did not pay his fees. The case was appealed, and the court of Bourges has just condemned Dr. Babon to pay $100 (500 francs) damages, on the ground that in warning his colleagues, Dr. Babon had performed an act of vengeance and had done a serious injury to his former patient. According to this decision, each physician may refuse his own services to any patient, but he cannot concert with his colleagues for the same purpose.

Sewage Disposal

Since the hygienists have definitely condemned the draining of sewage into running streams, the city of Paris faces an exceedingly complex problem. At great expense in the western suburbs, sewage fields have been created, where the ground, being particularly permeable, allowed the absorption of large quantities of liquid; but still the ground is to-day saturated to such a degree that leguminous vegetables grown on these fields have such a peculiar odor that they are not salable in the markets. It is even demanded that these products should bear a special label, in order that buyers may recognize them. The market-gardeners of the suburb naturally do not favor an increase of the sewage fields. Moreover, this system is now insufficient, not only because of the relatively rapid saturation of the ground, but still more because of the incessant development of the population of Paris. A few years ago, when a third great receptacle for sewage was opened, the administration required that not a drop of refuse water should be thrown into the Seine any more. Now the daily total of the sewage from public and private sources amounts to 206,032,180 gallons (780,000 cubic meters), and the various fields which receive the sewage absorb daily only about 145,272,050 gallons (550,000 cubic meters); there remains for each daily period of twenty-four hours 60,760,130 gallons (230,000 cubic meters) of sewage draining into the Seine. This situation is evidently intolerable, apart from the fact that the dwellers on the river banks are able to obtain large indemnities for the injury to their interests. The city of Paris, then, is compelled to put a stop to this state of affairs as early as possible. A sum of $3,000,000 (15,000,000 francs) has been set apart for this purpose, but the method to be employed has not yet been selected.

Measures Against Cholera

In accordance with instructions from the government, samples of waters of all the canals and rivers crossing the French frontiers on the north and northeast have been taken and submitted for bacteriologic analysis to the Pasteur Institute of Paris. This analysis has shown that there is no trace of the cholera vibrio in the waters examined. Although the sanitary situation along the frontiers is much more reassuring, the surveillance mentioned in my previous letter (THE JOURNAL, Oct. 2, 1909, liii, 1111) continues to be exercised throughout the north and northeast of France.

The Hygiene of Dwellings

The National Congress on Sanitation and Salubrity of Dwellings, which will be held next month in Paris, has an exceedingly broad program, the subjects being divided into three classes, as follows:

1. General: inquiry into the application of the law of 1902 for the protection of public health; modifications of this law; modifications in sanitary regulations; free spaces in cities.

2. Special: heating and ventilation of buildings; the education of the people in regard to the hygiene of the dwellings; sanitation of buildings occupied by working people who carry on their trades at home.

3. Military: installation of spray baths in barracks; installation of latrines in barracks, encampments and cantonments.

The organizing committee of the congress has addressed to a certain number of medical societies (*syndicats médicaux*) a series of questions in regard to the results of the law of 1902 in respect to the healthfulness of dwellings, unhealthful buildings and the sanitary records (*casiers sanitaires*). These last comprise records of hygienic conditions of each house, the deaths therein by transmissible diseases, disinfections carried out, dates and causes, etc. In Paris this service of the sanitary records has been in operation since 1894; it shows that certain houses constitute veritable hotbeds of tuberculous infection. There are, in fact, 820 houses which, out of a population of 106,300 tenants, have given, in ten years, 11,500 deaths from tuberculosis, more than 14 deaths per house. Unfortunately, the precise information contained in the sanitary records has had, up to the present, no particular results, for

these notes are kept secret, in order not to damage the proprietors. The Congress of Tuberculosis, held in Paris in 1905, passed a resolution asking that the public authorities be given the right and the means of condemning all buildings dangerous for the health of the inhabitants, but this resolution has, up to the present, had no legislative sanction. Moreover, there may be some question whether the destruction of unhealthful buildings would in itself insure the hygiene of dwellings, for the building license, which in other countries, in England especially, is burdened with many restrictions in the public interests, is with us a mere formality, so that the buildings which replace the unhealthful ones destroyed may be just as defective. All our legislation on this point really needs thorough revision.

Sectarian Spirit and Medicine

There exists in France, in addition to the colleges and schools (*Facultés et Ecoles*) of medicine which depend on the government, an establishment which is independent of state control, that is the free or catholic school of medicine and pharmacy (*Faculté libre ou catholique de médecine et de pharmacie*) of Lille, whose pupils, however, pass their examinations before a special board determined by the law and receive a diploma from the government, for no one can practice medicine in France unless he is furnished with a diploma of doctor of medicine, given by the French government. Recently the administrative board of the hospitals of Dunkerque, a city in the same department as Lille, a physician decided to open to competition two new posts for medical men, but with the proviso that no candidate would be accepted except a graduate of the Catholic school of Lille. The medical society (*syndicat médical*) of Dunkerque, justly indignant, passed a resolution protesting against this ruling and demanding that the competition be thrown open to every French physician, on the ground that the diploma given by the French government should carry the right of competing on equal terms for public places and functions.

"The Practitioner's Sundays"

Under the title of "The Practitioner's Sundays" (*Dimanches du praticien*) some physicians have organized in Paris a series of lectures intended to keep practitioners informed in regard to scientific progress in all the branches of medicine. They will be held on Sunday, the only day on which many physicians are at liberty. Because of the lively interest felt in all questions in regard to radium and radiotheraphy, the first lectures will be on this subject. M. Matou, assistant at the Museum of Natural History, will speak on radiations and radioactivity. The following Sunday, Dr. Dominici will talk on the therapeutic application of radium.

The Physicians' "Salon"

A physician's artistic society, called L'Esculape, has just been founded. It has organized for next November an exhibition of works of art by physicians (painting, sculpture, engraving and decorative arts). This society, under the patronage of Drs. Gariel, Gilbert, Marcel Labbé, Richelot, Widal, and others, professors and *agrégés* of the Paris medical school, intends also to give literary, dramatic and musical performances.

Correspondence

Warning Against Impostor

To the Editor:—Kindly warn the profession against a dirty, ragged individual who at present is calling on physicians in Brooklyn, soliciting money to get a meal or two with.

The man is about 5 feet 8 inches tall, with light hair and slight cockney accent. He claims to know the physician's relative in England. He also says that he is going to work his way home on an Atlantic transport liner, but has no money.

He has called on two others besides myself in the past few days. I discovered the fraud by casually mentioning my experience to another physician, who immediately described the beggar.

The man will probably try to work other cities.

H. W. BOICE, Brooklyn, N. Y.

X-Ray Examination.—The first and greatest value of the *x*-ray examination lies in the fact that it gives information regarding conditions existing in the sick or injured individual, which, in some instances, could not be obtained in any other way, or that it amplifies or confirms evidence obtained by the ordinary means of physical examination.—G. H. Stover, in *Denver Medical Times and Utah Medical Journal.*

Pharmacology

BYE CANCER CURE

Another Cruel Fraud Put Out of Business by the Postal Authorities

One of the most impudent quacks in the "cancer cure" business—B. F. Bye of Indianapolis—has just been officially denied the use of the United States mails. In the "Great American Fraud" the Bye "cancer curers" were shown up and the "piety" of Bye senior, who "founded a little church in Indianapolis with the money extracted from his dupes," was commented on. A few years ago the elder Bye ran a cancer cure fake known as the "Dr. D. M. Bye Combination Oil Cure Company" in Indianapolis, with his son-in-law, L. T. Leach, as manager. At the same time, one of the younger Byes—B. F. Bye—was operating a similar and rival concern in the same city. To quote from the "Great American Fraud":

> "Across the street from the Dr. D. M. Bye offices is the 'down-town office and laboratory' of Dr. B. F. Bye. In the circulars this is pictured as a large and commodious brick building, standing far back in an imposing shaded yard. The picture is purely imaginary. So is that of the doctor's 'Sanatorium' in the same pamphlet. The B. F. Bye outfit is ensconced in a shabby wooden house close to the street, and the 'office and laboratory' are little more imposing inside than outside. The younger Bye makes preposterous claims of 82 per cent. of 'complete recoveries.' . . . His treatment wouldn't remove a wart or cure a mosquito bite."
>
> "Dr. B. F. Bye's correspondence is replete with unconscious humor; *vide* this sample from his 'hurry-up' form-letter: 'When I pause and consider the amount of quackery and humbuggery practiced all over the country, it is not difficult to understand why the afflicted hesitate to accept new treatment, no matter how logical it may be.'
>
> "He belongs to most of the fake medical organizations in the country, whose diplomas (purchased) he proudly displays on his walls."

That useful and overworked department of the postoffice that investigates frauds finally notified Dr. B. F. Bye to show cause why a fraud order should not be issued against him and his "cancer cure" outfit. The facts in the case, as submitted to the Postmaster General by R. P. Goodwin, assistant attorney general, are in part as follows:

"Dr. Bye is engaged in treating persons, afflicted with cancer, through the mails. He has succeeded to the business of his father, who for a number of years was engaged in a similar practice at Indianapolis, Indiana. He is also a brother-in-law of Dr. L. T. Leach,[1] who conducts a similar business from Indianapolis and against whom this office has recommended the issuance of a fraud order. While Dr. Bye advertises to have a sanitarium at Indianapolis where he treats personally patients who come there, the fact is he has no sanitarium of his own and such few persons as do go to Indianapolis for sanitarium treatment he locates in boarding houses and such places.

"On receipt of an inquiry about his treatment, it is Dr. Bye's practice to send the correspondent a circular letter, a question blank, a sheet of testimonials and a booklet bearing the following title:

> Cancer, Its Etiology, Pathology and Treatment by Soothing Oils, by Benjamin F. Bye, M.D., Fellow of the American Association of Physicians and Surgeons; Member Indiana Association Physicians and Surgeons; Fellow of the Indianapolis Academy of Medicine; Member of the Incorporated Society of Science, Letters and Art of London, England; Physician to St. Luke's Hospital; Surgeon Hillsboro R. R.; Chief Surgeon Indiana 1st Regiment U. R. K. P.; Examiner of Northwestern Life Insurance Co., Etc., Etc., Etc. Office and Laboratory, Indianapolis, Ind.

MEMBERSHIP IN FAKE ORGANIZATIONS

"The inspector endeavored to ascertain the character of the above associations and societies, and from Dr. George H. Simmons, editor of THE JOURNAL of the American Medical Association, found that the 'American Association of Physicians and Surgeons' was in existence several years ago and that its business was in selling of diplomas to physicians and that it was made up of men not recognized by the medical profession as physicians of standing; that the 'Society of Science, Letters

1. The details of the government's action against Leach and his fake will appear in an early issue of THE JOURNAL.—Ed.

and Art of London, England,' was a 'fake diploma factory conducted by a man named Sturman,'[2] and that the same description was applicable to St. Luke's Hospital,[3] Niles, Michigan. As to the Indiana Association of Physicians and Surgeons and the Indianapolis Academy of Medicine, Dr. J. N. Hurty, secretary of the State Board of Health of Indiana, stated that he was unable to find any information concerning either of these societies. Dr. Bye admitted to the inspector that he has not been for some time chief surgeon to the Indiana First Regiment, U. R. K. P., or an examiner for the N. W. Life Insurance Company. It is thus seen that the pretense that Dr. Bye is a man who stands high in his profession and who is connected with recognized medical institutions of standing is false. Dr. Bye is a graduate of the American Medical School[4] of Indianapolis, 1896, and claims to have studied in the Kansas City Homeopathic School. He has never been in private practice, and his entire medical experience has been gained in this mail order cancer cure business.

CLAIMS MADE

"The representations contained in the circular letter and the booklet are intended and calculated to lead the correspondent to believe that Dr. Bye has discovered a combination of vegetable oils which is most efficacious in the treatment of cancer and that it will cure practically every case. For this treatment $25.00 is asked. Some of the representations made are quoted below:

A local treatment and the correct indicated remedy exhibited internally is the only rational one, and to be sure, safe and speedy, the local treatment must destroy the embryonic cells; also the foundation bed or "Stroma," and at the same time preserve the integrity of the surrounding healthy tissues. The combination of vegetable oils, where applied to these malignant growths, has accomplished what is so ardently desired.

The oil soon has the growth under its influence, and the disease is soon absorbed, causing a radical cure without pain. In case the diseased parts have already broken down and we have an open sore, the wound will slough in a short time, then it will heal nicely.

. . . we have found that where the patient will follow our instructions closely a rapid cure is the result.

Don't be misled by the claims of irresponsible people as to their ability to cure cancer by the injection of a specific serum or other substances. . . . We have discovered a combination of oils, which in their effect upon the diseased tissues, approaches the miraculous. It is the only successful remedy known to medical science and has the highest indorsement from the medical profession, as well as from ministers and thousands who have been cured. . . . The Oils are soothing and balmy, safe and sure, and cure without disfigurement.

The Combination Oil Cure does cure cancers and tumors to stay cured.

"The correspondent is also led to believe that Dr. Bye can properly diagnose the malady with which he is afflicted from the question blank.

"If the correspondent fails to purchase the medicines after this first solicitation it is the practice of Dr. Bye to write him another letter in which he states that 'from the information I have received I believe that I can effect a cure in this particular case.' In this letter the price of the treatment is reduced to $12.50; and if the treatment is not purchased pursuant to this solicitation, another letter is mailed the prospective patient in which he is asked to purchase a trial treatment which will last him several weeks for $3.00.

THE "CURE" ANALYZED

"The medicines were analyzed by chemists of the Department of Agriculture, and were found to amount to cotton seed oil and some ordinary tonics."

After giving the details of the analysis the government chemists make the following statement regarding the value of the "cure":

> "Analysis of the above treatment shows that it does not contain a single item which is considered of any special service for the cure or successful treatment of cancer, neither is the entire combination such as to warrant any representation to the effect that it is a cure for cancer."

As to the truthfulness of Bye's claim that he produces 82 per cent. of complete recoveries, the following is enlightening:

THE PERCENTAGE OF "CURES"

"The inspector procured from the post-office records the names and addresses of some twenty persons who have taken Dr. Bye's treatment and corresponded with the postmasters at the post-offices where these parties were located, with regard thereto. This correspondence shows that but one of these patients claims to have been cured, and in this case it develops that a surgeon had removed the growth before the Dr. Bye treatment was undertaken, and this surgeon reports that the growth removed was not cancerous."

In summing up, the assistant attorney-general makes the following statement:

"According to the evidence submitted the medical profession knows of no drug or combination of drugs which can be relied upon to cure cancer. That Dr. Bye has not succeeded where the profession has failed and that he is not honestly endeavoring to cure patients, but that his pretensions to have discovered a cure for this disease are false and fraudulent and asserted merely to deceive and defraud suffering humanity, is revealed by the analysis of his medicines and the finding that they are merely cotton seed oil and some ordinary tonics.

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, in violation of Sections 3929 and 4041, of the Revised Statutes, as amended, and therefore recommend that a fraud order be issued against the above named parties."

The order was issued.

2. See THE JOURNAL, May 29, 1909, p. 1773, for a more extended exposé of this fake.—ED.
3. Also exposed in THE JOURNAL, June 24, 1899; Oct. 21, 1899; Nov. 16, 1901; May 23, 1903, and June 6, 1903.—ED.
4. Now extinct.—ED.

MARMOLA

An Obesity "Cure" of the "Prescription Fake" Variety

To the Editor:—Can you give me any information regarding the composition of "Marmola," a remedy used to reduce flesh?

ROBERT S. MCCOMBS, M.D., Philadelphia.

COMMENT: Marmola belongs to a class of nostrums that has become very common since the passage of the national Food and Drugs Act and which descriptively may be called "prescription fakes." By this we mean that the "patent medicine" is advertised, not as such, but as an apparently innocent ingredient in a "prescription" which the reader is urged to have "filled" at the nearest drug store. Many of these advertisements are published in the form of reading matter, giving no indication of their real character. For example: we read in the *New York World* a short article by "Footlights," a supposititious theatrical press agent, who describes how a certain theatrical manager was able to reduce his "over-weight chorus." He did not "starve them into line, nor worry them verbally into shadows. . . . He simply hung up a new rule in the dressing-rooms, to the effect that every lady less than five feet seven who weighed in excess of 150 pounds must take a spoonful after each meal and at bedtime, of the following: One-half ounce Marmola, one-half ounce fluidextract Cascara Aromatic, and three and one-half ounces of Peppermint Water."

This is merely an example of the devious ways in which "patent medicine" vendors, aided and abetted by many newspapers, attempt to humbug the public. The Marmola Company has used the same methods of advertising its products in Great Britain, except that in the place of cascara and peppermint water, we find the prescription reads:

"One ounce of fluidextract of Glycyrrhiza, B.P., one-half ounce of Marmola, one ounce of pure glycerin, B.P., and three and one-half ounces of peppermint water."

More recently the concern has been varying its methods by advertising Marmola also in tablet form, giving the address of the company and the price of the preparation. The composition of Marmola was discussed in an article on "Commercial Thyroid Preparations" by Drs. Hunt and Seidell in THE JOURNAL, Oct. 24, 1908. It was there shown that the nostrum depended for its action on thyroid extract. Since that time the *British Medical Journal* has also analyzed the product. The results of this examination "showed the presence of (1) a large proportion of a powdered seaweed agreeing well in characters with the powder of *Fucus vesiculosus*, its identity being further indicated by the composition of the ash; (2) a substance of proteid nature, agreeing well in characters with the powder of dried thyroid gland, its identity being further indicated by the presence of iodin in organic combination; (3) phenolphthalein; (4) sodium chlorid (common

salt); and (5) extractive." These ingredients, so far as could be determined, were present approximately in the following quantities, to each dose:

Dried thyroid gland	1.4 gr.
Phenolphthalein	0.4 gr.
Sodium chlorid	0.7 gr.
Powdered *Fucus vesiculosus* (bladderwrack)	5.0 gr.
Extractive	2.5 gr.
Oil of peppermint	trace

The danger of the indiscriminate use by the laity of such potent drugs as thyroid extract is evident, and yet we read: "A safer way of reducing fat cannot be imagined than by the use of this pure Marmola prescription."

Purgen Again

To the Editor:—Those who prescribe "Purgen" may be interested in knowing how its popularity is established in Germany. I am sending with this letter the tissue paper cover of a straw such as is furnished with cold drinks in hotels and restaurants. Printed on the tissue paper is the legend:

PURGEN
DAS IDEALE LAXATIVUM
FRAGEN SIE IHREN ARZT!

How many take the trouble to "ask a doctor" is, of course, a question. As these covers are made in Paris, the exploitation may be even more wide-spread.

GEORGE DOCK,, M.D.

COMMENT: Purgen, it will be remembered, is one of the numerous proprietary names for phenolphthalein and already has been discussed in THE JOURNAL. In Europe advertisements of the preparation are to be seen in the street cars, daily press and even on toilet paper (THE JOURNAL, Nov. 2, 1907, p. 1541). In this country it is advertised—directly—only through the medical profession—which is cheaper.

Antidote to Hair Dye Poison

To the Editor:—During the past eighteen months I have seen four cases of poisoning caused by Mrs. Potter's Walnut-Juice Hair Stain, and I wish to offer a suggestion as to the treatment. The parts affected should be covered with gauze, saturated with a solution of sodium hyposulphite (sodium thiosulphate) 1 oz. to 4 oz. of water. This neutralizes the poison on the same principle as it acts when used for "fixing" photographic negatives. The relief from the burning, itching and pain, is almost instantaneous.

ALVIN S. STOREY, M.D., Cleveland, O.

COMMENT: The remedy suggested by Dr. Storey will, doubtless, prove of interest to a number of our readers. We have had reported to us no fewer than twenty-one cases of poisoning due to the use of Mrs. Potter's Walnut-Juice Hair Stain. This dye, which, according to published analyses, does not depend for its effect on walnut juice, has recently had its name modified—on the label and container. We see, however, in the daily papers, that the preparation is still advertised as a "Walnut-Juice Hair Stain," and the deception is carried still further by the picture of a woman with a basket on her arm and the legend, "Gathering Walnuts," under it. On the label, however, where direct lying has become illegal, owing to the Pure Food and Drugs Act, it has ceased to be "Walnut-Juice Hair Stain Compound" and has become "Walnut-Tint Hair Stain."

Eade's Gout Pills

To the Editor:—Can you give me any information about "Eade's Gout Pills?" B. S. DENZER, Baltimore.

ANSWER: This nostrum is made by a British firm, the agents for the United States being Fougera & Co., New York City. The pills are advertised to "Cure Gout, Rheumatism, Rheumatic Gout, Sciatica, Lumbago and all pains in the head, face and limbs." In the report of the Australian Royal Commission on Secret Drugs, Cures and Foods, a qualitative analysis of the nostrum is given as made by Robert Hutchison, M.D., F.R.C.P. According to this, Eade's Pills contain sodium salicylate, guaiacum and aloes.

Miscellany

Treatment of Hookworm Disease.—As many patients can not afford to lose time from work, Dr. C. Wardell Stiles (*Public Health Reports*) advises the devotion of Sunday to the administration of thymol for the expulsion of hookworms. The friends should be warned that the patient is to receive no food containing alcohol, fats or oil, lest absorption of thymol occur. In one case serious thymol poisoning occurred after the patient took a copious drink of milk the day thymol was taken. On Saturday evening a dose of Epsom salts should be given to clear away mucus that surrounds the parasites. The details are as follows:

1. *Position of Patient.*—The patient should be instructed to lie on his right side immediately before taking the drug and to remain in that position for at least half an hour after. The reason for this is that many of these patients have enlarged stomachs, and if they lie on their right side, the drug has the benefit of gravity in passing rapidly from the stomach to the intestine; but if any other position is assumed, the drug may remain in the dilated cardiac portion of the stomach for some hours and result in considerable complaint on the part of the patient and delay of the drug in reaching the worms.

2. *Time of Dosage.*—The time of giving and size of dose should be arranged on one of two plans, depending on existing conditions.

(a) The plan usually followed is: At 6 a. m., one-half of the total dose of thymol; at 8 a. m., one-half of the total dose of thymol; at 10 a. m., Epsom salts (never castor oil).

(b) If the case is an especially severe one, or if the patient has, on the first Sunday's treatment, complained of burning or other effects of thymol, the following plan is adopted: At 6 a. m., one-third of the total dose of thymol; at 7 a. m., one-third of the total dose of thymol; at 8 a. m., one-third of the total dose of thymol (if unpleasant symptoms, as a sensation of severe burning in the stomach, have appeared this third dose should be omitted); at 10 a. m., Epsom salts (never castor oil).

3. *Food.*—No food is allowed until after the 10 o'clock dose of Epsom salts, but the patient is permitted to take a glass or so of water after the thymol, if he desires.

4. *Thymol.*—Finely powdered thymol in capsules, preferably in 5-grain capsules, should be used. Before being powdered the thymol should consist of colorless translucent crystals.

5. *Age.*—The dose should be adapted to the apparent age and strength of the patient. The following represent the maximum amount to be used during one treatment: Under 5 years old, 7½ grains; from 5 to 9 years, 15 grains; from 10 to 14 years, 30 grains; from 15 to 19 years, 45 grains; from 20 to 59 years, 45 grains; above 60 years old, 30 to 45 grains. Total dose to be divided as indicated in Paragraph 2.

Repetition of Treatment.—The foregoing treatment is repeated once a week, preliminary treatment Saturday evening and thymol on Sunday morning, until the patient is discharged.

Duration of Treatment.—To recognize whether the parasites are all expelled, and therefore to determine when to end the thymol treatment, either of two plans may be adopted, namely:

(a) Microscopic examination: On Saturday morning ten microscopic preparations of a fresh stool should be made. If eggs are still present the treatment is repeated; if eggs are not found the thymol is discontinued. It takes about forty to sixty minutes to make this examination of ten slides thoroughly.

(b) Cheese-cloth method: A much easier way of recognizing the completion of the treatment, and for practical results nearly as satisfactory as the microscopic examination, is to instruct the patient to wash all of his stools Sunday, Monday, and Tuesday, through a cheese-cloth and to keep the cheese-cloth moist and bring it to the office on Tuesday. While the fecal material will wash through, the worms will be retained in the cloth. Treatment is continued as long as worms are found in the cheese-cloth.

Other Treatment.—If desired, iron may be administered on the days on which the thymol is not taken. It is a good plan, however, not to give iron during the first week, for it is quite important to convince the patient that the thymol treatment is the one which is really accomplishing the lasting good. If the drug is taken Sunday, the patient is likely to begin to feel some benefit by Wednesday or Thursday; his family is likely to notice it on Thursday or Friday. If iron is given during the first week, the conclusion may perhaps be drawn by the patient that it is really the iron which is causing the improvement, and he may discontinue the thymol. Of the two, the thymol is, of course, the far more important, for it reaches the parasite, while the iron reaches only the patient.

Pellagra in Italy.—In spite of the philanthropic and scientific efforts made against pellagra the disease continues to spread in Italy, although the total number of cases is somewhat smaller than formerly. According to a report by Assistant Surgeon R. A. C. Wollenberg (*Public Health Reports*, July 23, 1909) the number of pellagrins in Italy has diminished from 97,855 in 1879 to 55,029 in 1905, and may be estimated as less than 50,000 at the present time. The total number of deaths has markedly diminished from 3,987 in 1898 to 376 in 1907. In 1902 a law was passed making it illegal to sell or to store for sale any immature, musty or spoiled corn. The law also provided government aid for those affected with the disease and authorized the distribution of food to poor pellagrins and their families. It is difficult to enforce the law fully and it is probable that meal made from defective corn or adulterated with such corn products is still sold to a considerable extent. Sanarelli recommends a municipal milling ser-

vice to overcome this difficulty and the prohibition of milling of deteriorated maize for any purpose whatsoever. The geographic distribution of pellagra in Italy shows that it is spreading to the southern districts and is well established in central Italy, but during the last twenty years the extent of the disease has lessened considerably in the northern part of Italy. The reason for this better showing in the north is not altogether plain, but is partly attributed to the economic, social, and sanitary improvements that have been effected there in recent years. A hereditary predisposition to the disease has been shown. The investigations of Probizer among school children show the offspring of parents afflicted with pellagra to be quite generally of poor development, both physical and mental. In the treatment of the disease, Ghirardini has recently used atoxyl by injection. He states that it is well tolerated and improves the general nutrition, the psychic disturbances, and the ataxia. Gatti used serum from the recovered pellagrin in the treatment of two cases of typhoid pellagra. A general reaction appeared after one hour, with a rise in temperature. The fever was of short duration, defervescence lasting from one to three days, during which time there was a remission of all acute symptoms.

Hookworm Disease and the Negro.—The sociologic importance of hookworm disease is made prominent in a report by C. W. Stiles (*Public Health Reports*, July 30, 1909), who considers especially the relation of the negro to this disease. The worm has been named *Necator americanus*, which means "American murderer," on account of the great loss of life occasioned by it. The disease is known to exist in Africa and it is possible that it was brought to this country by the negro from his native home. The negro is partially immune, so that the symptoms of the disease are less manifest but investigation has disclosed a number of cases in a mild or latent form in the black race. The worm may enter the human system either with food and drink or through the skin and it is probable that the latter mode of entry is the more common. Unhygienic modes of living, especially when they lead to soil pollution greatly favor infection with this parasite. The negro is more likely to lack, or to fail to avail himself of proper privy facilities than the white and in accordance with this tendency it is found that in the southern states hookworm disease is more common in the negroes than in the whites. This is especially true of country districts, where not only farms, but even schools and churches are unprovided with privies. While the direct effects of the disease are less marked in the negroes than in the whites, yet long-continued infection induces anemia, makes the organism less resistant to disease and favors the occurrence of other infections. "In other words," says Stiles, "hookworm infection has an indirect effect in increasing the death rate from pulmonary tuberculosis." As the tuberculosis death rate is about three times as great in the negro as in the white, it is probable that the lessened direct mortality from hookworm disease is compensated for by the increase of tuberculosis as an indirect effect. Another important direct effect is the reduction of intellectual activity and learning capacity during the school period. Children so affected are apt to study and learn with difficulty; this is marked in negro children. The importance of properly constructed privies provided with means to protect soil from pollution and the feces from the access of flies is strongly urged by Stiles. The valuable influences to be exerted by preachers and teachers are thus summed up: "It lies within the power of preachers and teachers to play a very important rôle in reducing the death rate. They are the persons to whom many people look to set the example. If preachers and teachers themselves permit the yards of churches and schools to be defiled by soil pollution, it need not be thought strange if farmers permit soil pollution to occur around the homes. Further, it should be recalled that every church and every school around which soil pollution is permitted to occur may act as a disease-breeding center from which infection can be spread to the farms and homes. Further, also, not only can preachers and teachers do good by setting an example in preventing soil pollution, but if they will point out to their friends the dangers which this pernicious habit carries with it, they can be very important factors in inducing the public to institute more sanitary customs, and thereby they can be important factors in reducing the death rate."

Sense Culture.—P. W. Goldsbury (*Boston Med. and Surg. Jour.*, July 1, 1909), attempts to prove that nerve organs of the special senses, no less than the other organs and muscles, need for their healthful development adjustment of rest and stimulation, and that, as the brain must be rested somewhat by readjustment of energies within itself, the different sense organs may be refreshed by varying and qualifying forms of stimulation peculiar to themselves. Physical culture seeks to recreate by variations of the expressive or muscular activities. Why, asks Goldsbury, should not variations of stimulation for the avenues of impressions, the special senses, be used for their tonic effect? The eye may be rested after protracted use by merely closing the lid. But further rest may also be obtained by the playing off, so to speak, of one sense against another by diverting activity. For instance, if we stand and watch a circus parade for any length of time our eyes soon become tired by the "sights and features;" but the bursts of music from the bands, by stimulating the ear, relieve and freshen the eye. Musical comedy shows how the tax on the eye by the costumes, colorings and lights is relieved by the interpolation of music and songs. Even the popular concert where foods are served has a physiologic basis. The air, the water, and the mud baths peculiar to the famous health resorts called hot springs have a marvelous recuperative effect on tired minds and bodies. They stimulate the skin by drawing the blood to it; they give it healthful exercise and so rest and refresh the brain and eyes and ears that have been tortured by the incessant strain and noise and ugly sights and incidentally by the strenuous life. As the brain is refreshed by a different line of thought, or as the stomach and intestines may be improved by a readjustment of diet, so the senses may be recreated by a change of stimulus. The tired ear may be refreshed by simple variation in the sound it hears; that is, by being afforded stimulation in new directions.

Exercising the eye by change of focus seems to have a tonic effect. Looking from one object to another not only affords muscular but sensory exercise. A change of form affords a change of stimulus for the retina. Different colors may be said to afford qualitative variations in stimuli. The colors of the spectrum stand for a variation of wave length. Under ordinary conditions, red tires the eye sooner than green or brown. Goldsbury has a box with a series of small boards exhibiting different paint stains, and asks the patient to shuffle these over several times a day. For office workers whose eyes are so much on white paper and black ink, these varied tints of color and the grain of the wood afford a little soothing and diverting eye exercise, and occasionally this is found to relieve the headache of eyestrain.

The strong smelling-bottle when used is like a solar plexus blow; instead of this Goldsbury has a little case of four bottles containing mild selected odors. Occasional sniffs from these in turn result in a light form of gymnastics for the olfactory tract. To exercise this tract is to stimulate its circulation and this helps to relieve congestion in overstimulated adjacent tracts, as of the eye or ear, whether in the brain or outside of it.

As the skin is more or less susceptible to the feeling of all textures and dyes for clothing worn, there is plenty of opportunity for regulations as to changes at stated intervals of both inner and outer garments, shoes and stockings. Consideration should also be taken of the reactionary influence of the color of clothing on the eye. Air, water, and sun baths in all their various modifications are, in a way, subsidiary agencies of skin-stimulations. Taste must be indulged by being encouraged to choose more what it likes and by giving it more time to act. This would call for thorough mastication of food and the avoidance of flooding out the mouth when drinking. All the avenues for impressions in all their ramifications must be studied specifically and individually.

Stokes-Adams Disease and Lesions of the Bundle of His.—Vaquez and Esmein (*Bull. et mém. Soc. méd. d. hôp. de Paris*, December, 1908, No. 36) report several cases of Stokes-Adams disease, two of them with autopsy showing lesions (sclerogummous infiltration and old sclerosis) of the bundle of His.

In discussing these cases, besides pointing out its two types, they deduce some therapeutic conclusions of interest. Out of twenty cases of which they have found sufficient clinical and anatomic reports, syphilis was the certain etiologic factor in seven, and the probable one in a number of others. In the early stages of the disorder they advise therefore a resort, as quickly as possible, to specific medication, whether there is a history of luetic infection or not. By this means we have a chance to multiply the number of cases in which the condition does not progress until incurable sclerosis has occurred. In the same issue of the *Bulletin* and apropos to the communication of MM. Vaquez and Esmein, M. Louis Renon gives the history of a case of the disorder, seen in the first stages, with a syphilitic history dating back ten years. On the suspicion that he might have to do with a specific disease of the bundle of His, Renon treated the patient with antisyphilitic injections. These resulted in great amelioration of the patient's condition, although he can not call it a definite cure. The treatment has perhaps arrested the progress of the disorder and prevented its passing into the later stage characterized by permanent slow pulse, as pointed out by Vaquez and Esmein.

Building of Sanatoriums.—T. S. Carrington (*Journal of the Outdoor Life*, September, 1909) gives some suggestions as to the site and construction of sanatoriums. The sanatorium may do society harm if it places patients in luxurious surroundings and creates a mental state that will unfit them for the life to which they must return. Excellent results have been obtained by institutions providing only the actual necessities of life, and the observance of simplicity and economy in sanatorium construction avoids the danger of ruining the citizen while curing the individual. In selecting a site proximity, accessibility to friends and the former homes of the patients should be regarded as great advantages, but if the institution is to be a large one the climatic factor must be considered. It is well to remember that vastly differing climatic conditions are often found within a radius of a few miles. The southern exposure of a hill or mountain is usually to be preferred, and sites where strong prevailing winds exist during certain seasons of the year should be avoided. Some sort of an administration building should be provided and the lean-tos or cottages grouped about it; or if the institution is very large, separate groups of buildings should have separate local administration apartments in connection by telephone with a central administration building. Unless the climatic conditions necessitate corridors to connect the buildings, they may be omitted. Every effort should be made to give to the patients' quarters the most pleasant outlook possible. The lean-to style of building is at once the most economical and secures the best supply of fresh air, but even with one side of the room entirely open, ventilation must not be neglected or the air may become foul.

The Card Index System for Circularizing.—M. Perrin writes to the *Presse Médicale*, August 14, 1909, to suggest that persons advertising automobiles, sanatoriums, etc., should adopt the international card index form for their advertisements sent to individuals, which can then be readily classified like the card index in the libraries. These interchangeable cards for the international uniform index system are always 125x75 mm. (about 5x3 inches). He gives some examples and urges the great value of this method of advertising which would much facilitate ready reference, instead of the heterogeneous mass of circulars, pamphlets, etc., which now flood the mail and which it is impossible to preserve conveniently, much less to classify for ready reference.

Brain Storm.—At a meeting of the Chester County Medical Society, Dr. Frank Woodbury, secretary of the committee on lunacy in Pennsylvania, defined brain storm as a figure of speech used to express the idea of a sudden attack of mental perturbation. By analogy it graphically illustrates a psychic or mental commotion by calling to the mind of the hearer or reader the associated idea of a familiar physical phenomenon. Analogous terms used by writers in describing the same emotion have been "mental whirlwind," "maniacal explosion," "stormy irregularity of temperament attending maniacal outbursts," and "a hideous whirlpool of emotion." A summary of Dr. Woodbury's definition of "brain storm" is as follows: 1. Brain storm is a phrase familiarly used to describe brief states of mental emotion or perturbation without reference to their cause; it is a popular and not a scientific term. 2. Such attacks may be influenced by atmospheric and climatic conditions to an extent not usually known or suspected. 3. The presumed proximate causes in such cases are only incidental; they only lay the match to the mine which produces the explosion; the real causes lie deeper. Emotional, confusional conditions may occur in apparently normal persons, but are encountered more frequently among the insane. 5. Brain storms, so called, will be observed most frequently in persons who are neurasthenic and in a depressed vital condition; they are frequently epileptic or epileptiform. 6. Brain storms usually indicate pathologic conditions of the body or mind, but they are symptomatic of general conditions and are not of specific significance. Violent outbursts of rage or emotion have medical importance, and when of frequent occurrence should be investigated by a physician skilled in mental disorders.

Osteopathy Is Limited in New York.—We quote the following from an editorial in the *New York Commercial*, Sept. 21, 1909: "Not only the medical fraternity but the public as well will be deeply interested in the latest phase of the controversy over the legal and the medical standing of the osteopaths. One of the leading practitioners of this school in Brooklyn has just been denied by Justice Crane of the supreme court an injunction compelling the New York City authorities to grant him the same privilege of issuing death certificates for burial purposes as is enjoyed by regular graduate and licensed physicians. And the decision appears to be not only the only one that would be made under the circumstances, but also to be logical and eminently fair.

"It will be recalled that some months ago this same osteopath and his associates secured from the New York court of appeals an opinion that sustained them in their claims and contentions—that a licensed osteopath is not only a physician but under the sanitary code is also empowered to issue death certificates—but it plainly, although delicately, intimated that the code ought to be changed so as to make a distinction between the two classes of practitioners. This decision said in part:

"'Where death is caused by criminal means it usually occurs through external violence or from poison. The osteopath is precluded by the law from practising surgery or administering drugs, presumably for the reason that his education does not qualify him to practice where either drugs or surgery may be necessary. I am therefore not prepared to say that the board of health may not properly require that a certificate of death, which would exclude from the cause thereof either wounds or poison, be made by a physician who is competent to judge such matters. It is sufficient for the disposition of this case to say that the sanitary code now in force draws no such distinction between the two classes of physicians; but I think we should not intimate that the sanitary code may not properly be amended in this respect.'"

"The adroit use of negatives in this ruling is somewhat unique. The board of health understood the suggestion, however, and the change was promptly made—and with propriety, too. For how can a practitioner prohibited by law to practice surgery testify competently as to whether or not an apparently fractured skull is really fractured? Or how can one not permitted to administer drugs make oath that carbolic acid was the cause of a suicide's death?"

Treatment of Pleurisy.—A. Jacobi, in the *Monthly Cyclopedia and Medical Bulletin*, states that dry pleurisy with its excessive pain, demands morphin, never internally, but subcutaneously. Internally it will have no effect such as one wants; subcutaneously, that means locally over the seat of the pain, it will never fail. It will not cure the pleurisy, but will relieve and aid in curing the patient. Cough and sleeplessness caused by pain, must be relieved by an opiate. The physician may kill the patient by not relieving him. The fanatic interdiction of opium in the cases of infants is copied from one text-book into the next by those who treat people at their desks and not at the bedside.

A Longevity Trust.—The Metropolitan Life Insurance Company, in its campaign against tuberculosis, has issued for the instruction of its policy-holders, 3,500,000 pamphlets on the treatment and care of tuberculosis in the home, and proposes to establish a large sanitarium in the northern part of the State of New York, for the treatment of advanced tuberculosis among its policy-holders. The New York *Times*, commenting on this movement, says editorially that the term "life-insurance" never meant the insuring of lives until this year; that the agents of the companies "might easily be transformed into a militant body of health agents," armed with advice in regard to hygienic living for the benefit of the millions of policy-holders; and that "a staff of visiting physicians, specialists in the chief diseases," might be sent to treat policy-holders in each community who could not otherwise command skilled medical services. "By such work," continues the *Times*, "the companies would have fewer death claims to pay. They could promise larger benefits. But this, which has hitherto been a deciding argument in insurance competition, is only incidental to the added promise that the policy-holder's life, which is of quite inestimable value to his family, would be guarded. The competition of the life insurance companies, once started toward the prolongation of their patrons' lives, will not end until not only tuberculosis, but all the diseases that figure largely in the actuarial tables, become the subject of skilled attention. The lives of most men who can afford to employ a doctor are already 'insured.' Ultimately, we presume, those physicians not retained by the companies would be reduced to treating minor ills, or forced quite out of their profession. The organization of preventive medicine has reached startling proportions, but it has failed to keep pace with the progress of medical science. This progress is so rapid that the medical colleges complain that they can not catch up in their equipment. But if the new departure in life-insurance means anything, it means that the companies are beginning to resolve themselves into what they have an inherent right to be—companies of physicians—a longevity trust."

Cottonseed Oil Superior to Olive Oil.—So much emphasis has been placed on the fraudulent adulteration of olive oil by means of cottonseed oil that the impression has become very general that cottonseed oil was not suitable for the human stomach. The manufacturers of cottonseed oil in the south are evidently commencing a propaganda of education. If some of the statements we have seen are correct, cottonseed oil should be able to stand on its own merits as a food and to supplant olive oil to a certain extent. Because of the interest which attaches itself to this question, but without any investigation as to the accuracy of the statements, we abstract the following from an article which was published in *Life and Health* by Dr. O. C. Godsmark: The absolute purity and freedom from disease contamination, which obtain in the production of cottonseed oil, make this oil valuable as a food commodity. It is said to be more readily received and assimilated into the system than peanut butter, corn oil, or even the pure olive oil itself. Professor Moore of Arkansas State University states that of 100 parts of pure cottonseed oil, 93.37 parts are digested; of olive oil, 88.81 parts; of peanut oil, 85.87 parts; of corn oil, 86.47 parts; while of beef suet but 73.66 parts in 100 are digested. The substitution of the pure cottonseed oil in emulsions, in place of cod-liver oil, has been urged, and is even now being done. In the treatment of tuberculosis, when the emulsion is used, 25 out of 100 persons can use cod-liver oil emulsion, 75 out of 100 can take the emulsion when cottonseed oil is used, it being that much more easily assimilated by the weakened digestive organs of the patient. Dr. H. W. Wiley says that one unit of cottonseed oil will furnish over twice as much heat and energy as the same quantity of sugar or starch. When used with salt on bread, it makes a very acceptable substitute for cream and butter, and certainly is free from the diseases we contract from the animal world. Not only is cottonseed oil more easily digested than corn oil, peanut butter and even olive oil, but it also does not ferment in the stomach and bring on that long train of evils that have come from the too abundant use of some of the articles mentioned.

Book Notices

THE PSYCHOLOGY OF DEMENTIA PRÆCOX. By Dr. C. G. Jung, Privat-Docent in Psychiatry, University of Zurich. Authorized Translation with Introduction by Frederick Peterson, M.D., Professor of Psychiatry, Columbia University, New York, and A. A. Brill, Ph.B., M.D., Assistant in Psychiatry, Columbia University, New York. Paper. Pp. 153. Price, $2. New York: The Journal of Nervous and Mental Disease Publishing Co., 1909.

As a term of diagnosis "insanity" has become almost as meaningless as "paralysis," "apoplexy," "chorea" and "water on the brain." Even "mania," "melancholia," "paranoia" and "dementia" are fast losing their scientific significance, if indeed they ever had any. The word "psychosis," borrowed from psychology and applied scientifically, in modern psychiatry, to all states of unwonted mentalization, is coming more and more to stand for a particular class of phenomena, namely, individual psychophysiologic reaction to environment.

In consonance with the newer teachings of psychology it is beginning to be recognized that there are no mental diseases in the old sense, capable of classification as distinct and separate entities, but that there are merely broad and general groups of symptoms and strange mental exhibitions, each group indicating in a gross way the individual's bias or personal idiosyncrasy. Personality is a functional synthesis evolved under the influence of heredity and environment, a fact which explains why each patient has, so to say, his own psychosis or insanity.

In modern psychiatry, therefore, quite a new point of view has been assumed whereby more stress is laid on the cause, course and conclusion of the case than used to be done and far less on the mere strangeness and incongruity of the symptomatic display. Indeed, the symptoms of insanity are now regarded as quite unreliable for the purposes of diagnosis until they and the patient have been subjected to the closest sort of psychoanalysis. It has been more than once demonstrated that there is no more justification for the diagnosis of insanity on the strangeness merely of the patient's thinking and acting than there would be in making such a diagnosis on the strangeness of the thinking and acting of a savage.

So transcendingly important have become the patient's individual heredity and environment in modern psychiatry that these factors must be kept ever foremost in the mind of the examiner during a psychoanalysis. Not for a moment to-day will mere queerness and singularity of thought and action serve as conclusive evidence of mental aberration; only the relationship of the patient's thought and action to the thought and action of his previous state, his family, his neighborhood, race, and nation and all those elements and factors that fall within the sphere of his own heredity and environment, will finally determine whether he is, or is not, insane.

This new point of view of modern psychiatry, which unfortunately has not yet been fully recognized by the courts or the rank and file of the profession, and which will probably not be so recognized for a long time to come because of the almost universal lack of training in psychology and because of the great labor and skill required in the making of a thorough psychologic examination, is being taken by many of the more advanced thinkers. As a method of study it opens up quite a new field. Among the earlier pioneers to enter this field Breuer and Freud deserve great credit for their many exhaustive psychoanalyses and the brilliant light they have shed on the nature and symptoms of hysteria, dreams, and dream states. Recognizing this, Jung, another pioneer, has attempted to explain the general, indefinite form of mental aberration to which Kraepelin has given the name "dementia præcox" and of which he has so admirably described the clinical features, on the basis of individual psychoanalysis. Jung's dominant suggestion, running all through his book, is that a close psychoanalysis of each case of so-called dementia præcox ought to and does enable us to correlate all the clinical manifestations with the known data of the patient's particular personality as it has been elaborated by his known heredity and environment. In other words, dementia præcox is not to be regarded as a disease entity, but merely as a state of mind capable of analysis and explanation on a basis of individual and comparative psychophysiology.

Though "this work is the fruit of three years' experimental labor and clinical observation," Jung modestly disclaims having attempted more than to show how, by certain psychologic investigations, he reached views which he deems "fit for the stimulation of the problems of the individual psychologic basis of dementia præcox in a new and fruitful direction." In this, we think, he has succeeded admirably and with Dr. Peterson, who writes a most illuminating introduction to the book, we agree that Jung shows that just as in normal individuals and in hysteria the complex continues to play its part in dementia præcox, and as it does in dreams, the psychosis tends to actualize the repressed wishes from normal life;" and furthermore, that "the otherwise known absurdities and incomprehensibilities become quite clear," by reason of every case having "its special interests and its own individuality."

There are five chapters in the book. The first is devoted to a semi-historical and critical presentation of the earlier theories of the psychology of dementia præcox. The second is occupied with a study of the emotional complex and its general action on the psyche. "The essential basis of our personality is affectivity. Thought and action are only, as it were, symptoms of affectivity." In Chapter 3 the influence of the emotional complex on association is examined, with abundant illustration. In Chapter 4 an interesting parallel is drawn between dementia præcox and hysteria. "Between hysteria and dementia præcox there is only a resemblance of the psychologic mechanisms but no identity. In dementia præcox these mechanisms reach much deeper, perhaps, because they are complicated by toxic effects." And yet while there is no identity, it is nevertheless true, as Jung affirms, that "the psychologic mechanisms of dreams and hysteria are most closely related to those of dementia præcox. . . . The dreamer finds himself in a new and different world which he has projected out of himself. Let the dreamer walk about and act like one awakened and we have the clinical picture of dementia præcox." The entire fifth chapter, the longest and perhaps the most valuable, is taken up with the analysis of a case of paranoid dementia as a paradigm.

To those who would like to learn the trend of modern psychiatric investigation and to note the valuable contributions of the newer psychology to the solution of the intricate problems of mental disease we would urgently recommend the reading of Jung's work, both for its stimulating effect toward further thought and as an illustration of what a thorough psychologic analysis and diagnosis of a case of mental disease involves or presupposes in the examiner.

The translator and editor are to be highly complimented on the skill with which they have given to the American reader a correct and lucid presentation of one of that class of books usually considered the hardest to comprehend, namely, those devoted to the problems in abnormal psychology.

INFANT FEEDING. By J. S. Fowler, M.D., F.R.C.P., Physician to the Royal Hospital for Sick Children, Edinburgh. Cloth. Pp. 230, with illustrations. Price, $1.50. New York: Oxford University Press, 1909.

This very attractive little flexible-covered manual is a worthy companion to the many compact, simple and extremely lucid guides to infant-feeding that have come to us from time to time from English pediatricians. While in many ways following ideas current in England and the United States, it has a marked individuality and we find different methods giving a greater or less proportional value as a result of Dr. Fowler's own experiences. Thus he devotes ten pages to Budin's method of feeding undiluted sterilized (forty minutes) cow's milk to nearly all infants, and reports results but little less favorable than those of the French author himself. Relatively little is said of sodium citrate, and then it is recommended only to meet certain definite indications, and not as a sort of infant-feeding panacea, to which some of Dr. Fowler's countrymen have exalted it. Dr. Fowler is lukewarm in his attitude toward the percentage system, "a method still largely employed in America," and while he is unstinted in his commendation of the great work done by Rotch, he does not believe that the minute fractional elaboration of that system has any practical value. The book does not, of course, as yet reflect the recent German advances, but is an admirable, clean-cut, sane presentation of this complex subject up to that point.

BACTERIAL FOOD POISONING. By Prof. Dr. A. Dieudonné, Munich. Translated and Edited, with Additions, by Dr. Charles Frederick Bolduan, Bacteriologist, Research Laboratory, Department of Health, City of New York. Cloth. Pp. 128. Price, $1.00. New York: E. B. Treat & Co., 1909.

Dr. Dieudonné maintains the position that most cases of food poisoning are due to the contamination of foods by certain specific bacteria. The *Bacillus proteus* in particular is incriminated; an arraignment not easy to understand in so far as the proteus bacillus is very extensively distributed, while typical cases of food-poisoning are very rare. *Bacillus enteritidis*, *Bacillus paratyphi* and the anaërobic *Bacillus botulinus* are all carefully discussed and their more or less hypothetical rôle in the production of various forms of food-poisoning explained. Ptomain poisoning by autolysis without the intervention of bacteria is not at all considered. Food intoxication by metallic poisons is declared to be much more rare than commonly assumed, but the facts adduced in favor of this view are rather scanty and the argument not altogether convincing.

Too much space is given to the purely bacteriologic aspect of the question, as for instance the cultural characteristics and the morphology of various well-known bacteria; not enough attention is bestowed on the finer details of symptomatology and diagnosis. The rules of prophylaxis are in some instances almost naive, as for instance, "meat showing evidence of putrefaction should not be eaten;" nearly all the other rules of prophylaxis are trite and essentially amount to a plea for cleanliness in the handling, preservation and preparation of foods. Here and there a suggestion is made in regard to serodiagnosis, but no definitely new facts are given; nor does it seem feasible from a clinical standpoint to attempt the serodiagnosis of a series of disorders, apparently of manifold origin, that either run a rapidly fatal course or quickly hasten to spontaneous recovery. The treatment advised is essentially eliminative and symptomatic. All in all, the book is an interesting review of the whole subject of food-poisoning, well classified and complete from the historic and casuistic standpoint; it is a convenient reference work for the bacteriologist and pathologist, but of relatively small clinical value to the practitioner. The translation is very good.

THE THERAPEUTICS OF RADIANT LIGHT AND HEAT AND CONVECTIVE HEAT. By William Benham Snow, M.D., Author of "A Manual on Electro-Static Modes of Application, Therapeutics, Radiography, and Radiotherapy." Cloth. Pp. 119. Price, $2. New York: Scientific Authors' Publishing Co., 349 W. 57th St.

This manual of 110 large octavo pages is devoted to the therapeutic application of the various forms of radiant energy. It is hard to classify some of the books on the therapeutics of radiant energy. They are not entitled to be classed as fiction; neither are they narratives of facts as the unenthusiastic observer sees them. The authors will assume some law of "harmonic vibration" or something of that kind, and then from such premises will by deduction arrive at a system of physical therapeutics. Pathology does not play a very important part in such systems, but they are strong on the influence of various "modalities" on molecules and cells and metabolism. The style usually suggests that in which other systems of therapeutics, most of them of lamented memory, were set forth with their enthusiasm, their innocent superiority to critical analysis, and their unbounded love for panaceas.

The book before us belongs in this class. "In accord with the law of harmonic vibration, it is probable that the tissues attune themselves from a source of mixed vibrations, as of the combined spectral vibrations of radiant light and heat, deriving therefrom by selection the kind of energy which sets up and restores functional activity. . . ."

"These higher frequencies of radiant energy conserve the chemical actions and the more gross and energetic mechanical agencies, as certain electrical modalities, mechanical vibration and exercise conserve the mechanical demands for relieving stasis and infiltration, and also increasing the activity of the grosser functions of the organism."

"From the point of view suggested by the above premises it will be recognized that the study of the application of these vibratory agents to therapeutics suggests the investigation of the principles of adaptation of external vibratory energy

to the restoration of the body, properly sustained, to its normal vibration in all its parts, as evidenced by the revival of health with the restoration of functional activities." And there you are—a bit groggy, doubtless, but still conscious. Of course a book which starts off with such metaphysics can not be followed very far by one who keeps his feet on the earth.

THE ELEMENTS OF HYGIENE FOR SCHOOLS. Compiled by Isabel McIsaac, Collaborator of the *American Journal of Nursing*. Cloth. Pp. 172. Price, 60 cents. New York: Macmillan Company, 1909.

This is a presentation of the subject of hygiene in such a way as to be of practical use to pupils in the public schools who will probably have no further opportunity to study the subject. The first chapter is devoted to bacteriology, not only in relation to disease, but to housekeeping, farming and various industries. The hygiene of occupation is discussed at some length. A chapter is devoted to food and in it are discussed the composition of various animal and vegetable foods and the methods of preparing them. Subsequent chapters deal with air, climate, ventilation, etc.; heating and lighting; purification of water; care of sewage and garbage; causes and dissemination of disease; personal, household and school hygiene; disinfection and quarantine. The book is a valuable one and to be commended.

SELF-HELP FOR NERVOUS WOMEN. By John K. Mitchell, M.D., Fellow of the College of Physicians of Philadelphia. Cloth. Pp. 201. Price, $1.00. Philadelphia: J. B. Lippincott Co.

This is a reprint, as stated in the preface, of a series of articles published in 1901 in *Harper's Bazar*, but added to and amended from the suggestions given in the numerous communications received by Dr. Mitchell from correspondents since the first publication. It is not intended for physicians, but it has the medical interest of being the advice to the laity of an experienced practitioner in the treatment of these nervous disorders. There is little or nothing in it that can be criticized by any physician, and some of us might perhaps profit by some little practical hints here and there in its pages. Dr. Mitchell has added his opinion of the so-called Emmanuel movement and of the therapeutic efforts of clergymen in general to the original material of his chapters. He says, in this connection, that while, in his experience, their efforts to afford assistance, in cases in which the nervous sufferers have been referred to them, have as often as not been unsuccessful, the only religious sect in which he has not met these cases is that of the Quakers. This, considering the opportunities for observation he must have had, is of interest. He attributes this to the cultivation of emotional control among Quakers, but it may also be due, it seems to us, to a natural and artificial selection process that has weeded out those who would be most subject to the forms of abnormal mentality here described.

TREATMENT OF THE DISEASES OF CHILDREN. By Charles Gilmore Kerley, Professor of the Diseases of Children in the New York Polyclinic Medical School and Hospital. Edition 2. Cloth. Pp. 629, with 78 illustrations. Price, $5. Philadelphia: W. B. Saunders Co., 1909.

The natural assumption of meritorious qualities in a book which has reached a second edition will not be reversed by an examination of this work. It is intended especially for practitioners and is full of suggestions and details which can not fail to make it useful to every one who has to deal with children, either sick or well.

NICHOLAS SENN. An Appreciation. Published under the auspices of the Nicholas Senn Club of Chicago. By S. M. Wylie, M.D., Paxton, Ill. Cloth. Pp. 27.

This little book was written, says Dr. Wylie, "in fulfillment of a promise made to him [Senn] many times, a compact, mutually agreed on, whereby one of us, God alone knew which, was to perform this service for the other." While in no sense a biography, yet many interesting facts of a biographic nature are given—touches that make the dead surgeon live again. By those who, like Dr. Wylie, were close personal friends of Dr. Senn as well as by those who, while unacquainted with him, yet entertained the highest respect for him both as a man and as a surgeon, this little "appreciation" will be read with pleasure and interest.

FESTSKRIFT VID TUBERKULOS-KONFERENSEN I Stockholm, 1909. Paper. Pp. 136, with illustrations. Utgifven af Svenska Nationalföreningen Mot Tuberkulos.

Although this pamphlet has a Swedish title, not difficult to understand, that language is entirely avoided in the text; the articles being printed in German, French or English. They cover a considerable number of subjects, relating to the campaign against tuberculosis in Sweden. The first is a general review of the activity of the Swedish National Association against Tuberculosis from 1904 to 1908, in German, by B. Buhre. Next follows an account of the institutional treatment of tuberculosis, comprising two articles, one in French by J. G. Edgren, and the other in English by S. Carlsson. Other articles deal with the sale of charity stamps, the occurrence of tuberculosis in public schools, social hygienic experiments, bovine tuberculosis, and an epidemic of consumption in the commune of Orsa. The book will prove of great interest to those engaged in the campaign against tuberculosis.

MEDICAL AND SURGICAL REPORT OF THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK. Vol. VIII, December, 1908. Edited by John S. Thacher, M.D., and George Woolsey, M.D. Boards. Pp. 371, with illustrations.

This report consists mainly of papers by members of the hospital staff, usually reprinted from medical journals. An interesting feature described by W. P. Northrup is the open-air roof-wards which have been established through the generosity of Mr. and Mrs. W. K. Vanderbilt. Experience has shown that for day and night continuous treatment the open roof-wards have done better service than balconies. The volume contains a number of valuable papers which reflect credit on both authors and the institution.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BARTLETT METHOD OF PREPARING CATGUT

To the Editor:—Please publish in THE JOURNAL the formula used in preparing catgut by the Bartlett method.

P. H. PROVANDIE, Melrose Highlands, Mass.

ANSWER.—The following is the method advised by Dr. Willard Bartlett:

The strands are cut in convenient length, say 30 inches, and made into little coils about as large as a silver quarter. These coils are then strung like beads on a thread so that the whole quantity can be conveniently handled by simply grasping the thread. The string of catgut coils is dried for one hour at a temperature of 180 F. and then for a second hour at 220 F., the change in temperature being accomplished gradually. The catgut is then placed in liquid petrolatum, where it is allowed to remain until perfectly clear, in the sense that the term is used in the preparation of histologic specimens. This is usually accomplished in a few hours, though it has been Bartlett's custom to allow the gut to remain in the oil over night. The vessel containing the oil is next placed on a sand-bath and the temperature raised during one hour to 320 F., and this temperature is maintained for a second hour. By seizing the thread with sterile forceps the catgut is lifted out of the oil and placed in a mixture of iodin crystals, 1 part, in Columbian spirits, 100 parts. In this fluid it is stored permanently, and is ready for use in twenty-four hours; the thread is then cut and withdrawn. Thorough preliminary drying is essential; success is only possible when this is carried out in a very dry room and preferably in dry weather. Dr. Bartlett now stores it in a 1 to 1000 iodin solution in Columbian spirits (methyl-alcohol, 97 to 98.5 per cent.).

UHLENHUTH'S METHOD OF BLOOD DIFFERENTIATION

To the Editor:—Please inform me through the columns of THE JOURNAL, the full technic of Uhlenhuth's method of blood differentiation, as used in medicolegal work. B. R. LEROY, Athens, O.

ANSWER.—The following is the technic as described by Peterson and Haines, in their "Text-Book of Legal Medicine and Toxicology," Vol. ii, p. 751: The method of humanizing a rabbit is to inject into the peritoneal cavity about 10 c.c. of human blood serum at intervals of two or three days until the rabbit has received 6 or 8 injections. The rabbit should be allowed to rest about a week after the last injection. The blood serum for performing the test may then be obtained either by killing the animal by bleeding it from one of the large vessels, or without killing the animal by removing

a little blood from one of the large veins of the ear. The blood thus collected should be placed in a cool place and allowed to coagulate. The serum that separates from the clot may be used for performing the test.

The blood to be tested should be prepared as follows: If it be fresh blood, it should be diluted about 1 to 100 with normal salt solution. Thus diluted, it should have a light-pink color, and this diluted solution, if not perfectly clear, should be allowed to settle until it is clear, and the clear, supernatant fluid decanted into another test-tube. If the blood to be tested is a dry blood-stain, a little of it may be scraped off with the point of a knife on to a watch-glass, if the stain be on some hard surface so that the blood has not penetrated into the substance of the material. If the blood-stain be on cloth into which the blood has soaked, it is necessary to cut out a few threads and transfer them to a watch-glass. These fragments of dried blood should then be treated with two or three drops of distilled water until the soluble portion of the dried blood has been dissolved. The clear solution should then be transferred carefully to a very narrow test-tube, and to this should be added an equal volume of double normal salt solution. The clear fluid thus obtained either by diluting fresh blood or by dissolving the blood serum from the dried blood-stain is then tested by adding to it a few drops of the serum obtained as above described from the humanized rabbit. If the solutions contain human blood serum, there will occur an immediate cloudiness that gradually increases, so that there is a distinct precipitation within one-half hour after the addition of the serum from the humanized rabbit. It is better often to allow the antiserum to flow down the side of the test-tube, so as to form a separate layer under the solution to be tested, in the same way that we add nitric acid to urine in testing for albumin. In this case the cloudiness and precipitate may be seen very distinctly in the zone at the point of contact of the two fluids. The precipitate occurs best when the mixture is kept at a temperature of about 37° C.

Ewing has shown that, in applying the serum test, it is important that the solution of the blood under examination be not too strong; if it is too concentrated, the blood of some of the lower animals may react to a greater or less degree. At a dilution, however, of at least 1 to 50 the blood of lower animals fails to give a reaction, and the test becomes a specific one for human blood. Dilution of the serum is even better than dilution of the blood.

TUBERCULOSIS OF FEMALE GENITALIA

To the Editor:—Please give me references to literature on tuberculosis of the female genitalia. A. BELITZ, Milwaukee, Wis.

ANSWER.—The following articles may be referred to:

Martin, A. Genital Tuberculosis, *Berl. klin. Wchnschr.*, Jan. 30, 1908; abstr. in THE JOURNAL, Feb. 22, 1908, p. 650.

Baisch, K.: Ultimate Results of Treatment of Genital and Peritoneal Tuberculosis, *Arch. f. Gynäk.*, lxxxiv, No. 2; abstr. in THE JOURNAL, March 14, 1908, p. 922.

Clark, S. M. D.: Tuberculosis of the Female Genitals, *New Orleans Medical and Surgical Jour.*, July, 1908; abstr. in THE JOURNAL, Sept. 5, 1908, p. 868.

Stone, I. S.: Tuberculosis of the Female Generative Organs, THE JOURNAL, Oct. 31, 1908, p. 1539.

Simmonds, M.: Tuberculosis of the Female Genitalia, *Arch. f. Gynäk.*, lxxxviii, No. 1; abstr. in THE JOURNAL, May 22, 1909, p. 1725.

Blau, A.: Origin and Spread of Tuberculosis in the Female Genital Tract. (Ueber die Entstehung und Verbreitung der Tuberkulose im weiblichen Genitaltrakte.) Verlag von S. Karger, Karlstrasse 15, Berlin, Germany.

TRAUMATIC NEPHRITIS

To the Editor:—Please give references to literature on traumatic nephritis (Bright's disease).

A. J. CROWELL, Charlotte, N. C.

ANSWER.—The following articles have appeared since 1904:

Oberndorfer, S.: Post-Traumatic Nephritis, *Münchener medizinische Wochenschrift*, 1, No. 50; abstracted in THE JOURNAL, Jan. 16, 1904, p. 210.

Klippel and Chabrol, E.: Traumatic Nephritis with Unilateral Edema. *Presse Médicale*, April 14, 1909; abstracted in THE JOURNAL, May 29, 1909, p. 1799.

ACETONE TREATMENT OF INOPERABLE CANCER OF THE UTERUS

To the Editor:—Please give me reference to the acetone treatment of inoperable cancer of the uterus.

M. IVERSON, Stoughton, Wis.

ANSWER.—The acetone treatment for inoperable cancer of the uterus is described by G. Gellhorn, St. Louis, in THE JOURNAL, April 27, 1907, p. 1400. Further reports by him have appeared in the *St. Louis Medical Review*, November, 1907, and in the *Münchener medizinische Wochenschrift*, Dec. 17, 1907.

The same treatment is referred to favorably by F. J. Taussig of St. Louis, in the *Interstate Medical Journal*, February, 1909.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 9. Sec., Dr. F. T. Murphy, Brinkley.

CONNECTICUT: Homeopathic, New Haven, November 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.

CONNECTICUT: Regular, City Hall, New Haven, November 9-10. Sec., Dr. Charles A. Tuttle, 196 York St.

FLORIDA: Jacksonville, November 10-11. Sec., Dr. J. D. Fernandez.

ILLINOIS: Coliseum Annex, Chicago, October 20-22. Sec., Dr. J. A. Egan, Springfield.

LOUISIANA: Homeopathic, New Orleans, November 1. Sec., Dr. Gayle Aiken, 1102 St. Charles Ave.

MAINE: Portland, November 9-10. Sec., Dr. Frank W. Searle, 806 Congress St.

MASSACHUSETTS: State House, Boston, November 9-11. Sec., Dr. E. B. Harvey, Room 159, State House.

NEBRASKA: Senate Chamber, State House, Lincoln, November 10-11. Sec., Dr. E. Arthur Carr, 141 South Twelfth St.

NEW JERSEY: State House, Trenton, October 19-20. Sec., Dr. E. L. B. Godfrey, Camden.

NEVADA: Carson City, November 1. Sec., Dr. S. L. Lee.

TEXAS: Levy Bldg., Greenville, November 9-11. Sec., Dr. M. E. Daniel, Honey Grove.

WEST VIRGINIA: Chancellor Hotel, Parkersburg, November 9-11. Sec., Dr. H. A. Barbee, Point Pleasant.

WYOMING: Laramie, October 20-22. Sec., Dr. S. B. Miller.

Better Conditions at the University of Vermont

The University of Vermont College of Medicine, Burlington, hereafter will be entirely under the control and management of the trustees of the university, according to an editorial in the *Vermont Medical Monthly* for August. There has been a partial control by the university for several years, but all financial obligations had to be met by the faculty of medicine. At the last meeting of the Vermont legislature an annual appropriation of $10,000 was voted to the university in aid of medical education, which made it possible for the university to assume the financial responsibility of the department, collecting all fees and paying all bills, including salaries. The College of Medicine of the University of Vermont well deserved this additional assistance and it means better things for medical education in that state. The medical faculty has voted to increase the preliminary requirement to one year of college work, including courses in physics, chemistry and biology, the increase to become effective in 1912.

Damages Awarded Against a Medical College

It is reported in the *Texas State Journal of Medicine* that Dr. R. L. Charlton was lately awarded judgment in the district court of Dallas county, Texas, for $1,000 damages against the College of Physicians and Surgeons, formerly the Bell Medical College, but in attempting to enforce the order the sheriff could find no property out of which to obtain the money. This information is interesting since it confirms the Texas State Board of Medical Examiners in their withdrawal of recognition from this medical college on the ground that it was not properly equipped to furnish medical education.

University of Southern California Has a New Medical Department

When the former College of Medicine of the University of Southern California became the Los Angeles Medical Department of the University of California the former university was left without a medical department. Recently, however, the College of Physicians and Surgeons of Los Angeles was taken over and made an integral part of the University of Southern California. It is stated that an enlargement of the medical course will follow the merger.

Texas June Report

Dr. M. E. Daniel, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Cleburne, June 22-24, 1909. The number of subjects examined in was 12; percentage required to pass, 75. The total number

examined was 175, of whom 150 passed, 19 failed, and 6 withdrew. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
College of Physicians and Surgeons, San Francisco	(1902)	80.6
Birmingham Medical College	(1908)	77
University of Arkansas	(1901)	83.9
Arkansas Industrial University	(1891)	75
Georgia College of Eclectic Medicine and Surgery	(1889) 75; (1890) 76.5; (1902) 75.	
Atlanta College of Physicians and Surgeons	(1909)	83.4, 85.6
Jenner Medical College	(1899)	76.5
Rush Medical College	(1895)	75
College of Medicine and Surgery, Chicago	(1909)	80.6
College of Physicians and Surgeons, Chicago	(1903)	91.3
Physio-Medical College of Indiana	(1906)	84.5
University of Louisville	(1879) 75; (1896) 75; (1907) 84.7; (1909) 80-1, 82.5.	
Louisville Medical College	(1906)	86.3
Tulane University of Louisiana	(1893) 80.5; (1891) 75; (1901) 80.5; (1905) 86.6; (1909) 79.7, 80.8, 80.8, 81, 82.6, 82.8, 83.5, 84.2, 84.5, 85.2, 88.1, 88.4, 91.3, 92.5.	
Johns Hopkins University	(1909)	92.5
University of Maryland	(1905)	83.2
Baltimore University	(1902)	81.7
Baltimore Medical College	(1909)	80.1, 86.9
College of Physicians and Surgeons, Baltimore	(1891)	75
Boston University	(1902)	76.3
Kansas City Medical College	(1897)	75
Missouri Medical College	(1879)	76.9
Barnes Medical College	(1909)	76.4
University Medical College, Kansas City	(1904)	82.8
St. Louis College of Physicians and Surgeons,	(1883) 75; (1889) 77.9; (1909) 77.1.	
Eclectic Medical College of New York	(1879)	75
Jefferson Medical College	(1907)	86.2
Memphis Hospital Medical College	(1901) 80.2; (1903) 77.2; (1904) 82; (1908) 79; 1909) 75, 75.2, 80.3, 85.9.	
Vanderbilt University	(1909) 78.3, 80.5, 81.3, 81.4, 84.2, 85, 85.3	
University of Nashville	(1908) 78.9; (1909) 83.3, 87.8	
University of Tennessee	(1909) 81.5, 81.9, 82	
Meharry Medical College	(1909) 75, 77.2, 80.4	
College of Physicians and Surgeons, Memphis	(1909)	88.2
University of the South	(1908)	83.2
Chattanooga Medical College	(1905)	76.4
Southwestern University Medical College, Dallas	(1908) 81.6, 82.3; (1909) 79.1, 80.4, 81.7, 84.7, 86.3.	
Baylor University	(1909) 76.9, 78.2, 79.9, 81.6, 81.7, 82.5, 82.5, 84.3, 84.3, 87.4, 87.8, 89.3, 89.9.	
Fort Worth University	(1909) 75.4, 78.3, 78.3, 80.6, 82.8, 83.4, 86.4, 87.5, 89.6, 91.1, 95.9.	
University of Texas	(1908) 84, 93.4; (1909) 81, 81.7, 84.2, 84.3, 84.4, 84.7, 85, 85.5, 85.5, 85.7, 86, 86.6, 86.7, 87.1, 87.7, 87.8, 88, 88.1, 88.1, 88.2, 88.9, 89, 89.3, 89.6, 89.7, 90, 90.1, 90.1, 91.2, 91.3, 92.7, 93.3, 94.	
University of Vermont	(1895)	75
National Medical College, Mexico City	(1901)	85.4
University of Heidelberg, Germany	(1904)	95

FAILED		
College	Year Grad.	Total No. Exam'd.
Illinois Medical College	(1903)	1
Tulane University of Louisiana	(1909)	1
St. Louis College of Phys. and Surg.	(1908) 2; (1909)	3
North Carolina Medical College	(1909)	1
Memphis Hospital Medical College	(1901) 3; (1909)	4
University of Nashville	(1904) (1909)	2
Vanderbilt University	(1909)	1
Chattanoga Medical College	(1901)	1
Meharry Medical College	(1908) 2; (1909)	3
Southwestern University Medical College, Dallas	(1909)	1
Dallas Medical College	(1903)	1

Maryland June Report

Dr. J. McP. Scott, secretary of the Maryland State Board of Medical Examiners, reports the written examination held at Baltimore, June 22-25, 1909. The number of subjects examined in was 9; percentage required to pass, 75. The total number of candidates examined was 121, of whom 100 passed and 21 failed. Twenty-two candidates were licensed through reciprocity and 5 under exemption clauses and by special examination. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
George Washington University	(1908) 80; (1909) 80, 81, 83	
Howard University	(1908)* (1908) 81; (1909) 77, 81	
College of Physicians and Surgeons, Baltimore	(1907)* (1908) 81; (1909) 79, 83, 85, 86, 86, 87, 88, 88.	
Johns Hopkins University	(1904) 83, 87; (1905) 88; (1906) 90; (1908) 86, 88; (1909) 77, 78, 79, 82, 83, 84, 84, 84, 89.	
Baltimore Medical College	(1906)* (1909) 75, 75, 75, 77, 78, 80, 81, 81, 85, 87.	
Maryland Medical College	(1905)* (1908)* (1909) 75, 79, 80, 82, 83	
University of Maryland	(1907)* (1907) 80; (2, 1908)* (1909) 75, 75, 76, 76, 77, 77, 78, 79, 80, 80, 81, 82, 82, 83, 84, 84, 84, 85, 85, 87, 87, 87, 88, 88, 89, 89, 91.	
Baltimore University	(1907)*	
Woman's Medical College of Baltimore	(1908) 85; (1909) 79	
Leonard School of Medicine	(1909)	76
Jefferson Medical College	(1908) 76; (1909) 83	
University of Pennsylvania	(1908) 82; (1909) 76, 81, 81, 81, 82, 85, 88, 88, 89.	
Medico-Chirurgical College, Philadelphia	(1908)	80
University of the South	(1908)	75

FAILED	
University of Maryland	(1908)* (1909) 69, 70
Woman's Medical College of Baltimore	(2, 1908)* (1909) 74
Baltimore Medical College	(2, 1906)* (1909) 66, 68
Maryland Medical College	(1906)* (1907)* (1908)* (1908) 67; (1909) 63, 69, 72.
University of Pennsylvania	(1909) 73
University of the South	(1904)* (1908*
University College of Medicine, Richmond	(1909) 70

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Howard University	(1907)	S. Carolina
George Washington University	(1900) Ohio; (1903)	Virginia
Rush Medical College	(1897)	Illinois
Georgetown University	(1891) (1893)	Dist. Colum.
Hospital College of Medicine, Louisville	(1898)	Ohio
University of Maryland	(1906) Virginia; (1904)	Dist.Colum.
Baltimore Medical College	(1903) Indiana; (1907)	W. Virginia
Johns Hopkins University	(1906) Virginia; (1908)	Michigan
College of Physicians and Surgeons, Baltimore	(1897)	Missouri
Maryland Medical College.	(1907) (1908) Georgia; (1907)	W. Virginia
Baltimore University	(1897)	Wisconsin
Tulane University of Louisiana	(1901)	Texas
Woman's Medical College of Pennsylvania	(1904)	Missouri
Medical College of the State of South Carolina	(1902)	S. Carolina
Medical College of Virginia, Richmond	(1898)	W. Virginia

LICENSED UNDER EXEMPTION CLAUSE AND BY SPECIAL EXAMINATION

College	Year of Grad.
College of Physicians and Surgeons, Baltimore	(1882) (1888)
University of Maryland	(1888)
University of Budapest, Hungary	(1869)
University of Palermo, Italy	(1908)

* Re-examined.

Virginia June Report

Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, reports the written and oral examination held at Richmond, June 22-25, 1909. The number of subjects examined in was 9; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 132, of whom 112 passed and 20 failed. Four reciprocal licenses were issued. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Howard University	(1909)* (1909) 81, 83, 85	
Georgetown University	(1907)*	
George Washington University	(1894)* 1908)	80
University of Louisville	(1906)	77
Kentucky School of Medicine	(1907)*	
Tulane University of Louisiana	(1908) 79; (1909)	78
Baltimore Medical College	(1907) 75, 76; (1909) 77,	79
Johns Hopkins University	(1909)	82
University of Maryland	(1903) 75; (1909) 77, 79, 83, 85	
College of Physicians and Surgeons, Baltimore	(1882)* (1908) 79; (1909) 82.	
Maryland Medical College	(1902)* (1905) 77; (1909) 75, 82, 82	
New York University Medical College	(1891)*	
Leonard School of Medicine	(1906) 75; (1908) 75; (1909) 75, 75, 80, 80.	
University of Pennsylvania	(1907)* (1909)	82
Woman's Medical College of Pennsylvania	(1907)	82
Jefferson Medical College	(1908)	75
Medical College of the State of South Carolina	(1901)*	
University of the South	(1908)	75
University of Nashville	(1909)	77
University of Virginia,	(1907) 78; (1908) 76, 80; (1909)* (1909) 77, 78, 78, 85.	
University College of Medicine, Richmond	(1907) 79; (1909) 76, 76, 76, 77, 78, 79, 79, 79, 80, 80, 80, 80, 80, 80, 80, 80, 81, 82, 82, 82, 82, 83, 83, 83, 84, 84, 84, 85, 85, 87, 90.	
Medical College of Virginia	(1907) 83; (1908) 81; (1909) 75, 75, 76, 77, 77, 77, 77, 78, 78, 78, 79, 79, 79, 79, 80, 81, 81, 82, 82, 82, 83, 84, 84, 84, 85, 87.	

FAILED		
Kentucky School of Medicine	(1887)* (1908)	71, 73
Maryland Medical College	(1904)* (1908) 73; (1909)	72, 72, 72
University of Maryland	(1909)	71
Baltimore Medical College	(1909)	72
College of Physicians and Surgeons, Boston	(1907)	72
Leonard School of Medicine	(1906) 68; (1908)	71
University of the South	(1907) 69; (1909)	72
Chattanooga Medical College	(1905) 46; (1907)	70
Memphis Hospital Medical College	(1909)	66
Medical College of Virginia, Richmond	(1907)	72
University College of Medicine, Richmond	(1909)	73

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Maryland Medical College (1904)	West Virginia; (1904)	Maryland
University of Maryland	(1906)	Maryland
Medical College of Virginia, Richmond	(1906)	W. Virginia

* Took oral examination.

Wyoming June Report

Dr. S. B. Miller, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, June 23-25, 1909. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Denver and Gross College of Medicine (1908) 79.5;	(1909)	90.2
Tulane University of Louisiana	(1887)	79
Beaumont Hospital Medical College	(1893)	75.1
Nebraska College of Medicine	(1909)	78.6
Creighton Medical College	(1909)	81.8

New Mexico July Report

Dr. J. A. Massie, secretary of the New Mexico Board of Medical Examiners, reports the written examination held at Santa Fe, July 12, 1909. The number of subjects examined in was 12; total number of questions asked, 100; percentage required to pass, 75. Only one candidate, a graduate of the University of the South, 1899, was examined, and he passed with a grade of 84.4 per cent. Twenty-one candidates were licensed on presentation of satisfactory credentials. The following colleges were represented:

LICENSED ON CREDENTIALS

College.	Year of Grad.
Northwestern University Medical School	(1898)
College of Physicians and Surgeons, Chicago	(1902)
Bennett Medical College, Chicago	(1889)
Illinois Medical College	(1899)
University of Colorado	(1896)
Drake University	(1903)
Louisville Medical College	(1871)
Kentucky School of Medicine	(1889)
Hospital College of Medicine, Louisville	(1902)
University of Louisville	(1888) (1904)
University of Maryland	(1896)
Barnes Medical College	(1897) (1904)
University Medical College, Kansas City	(1908)
Missouri Medical College	(1898)
Washington University, St. Louis	(1905)
Ohio Medical University, Columbus	(1880) (1896)
Medical College of Ohio	(1892)
University College of Medicine, Richmond	(1898)

Arkansas July Report

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, July 13, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 85, of whom 39 passed, including 17 non-graduates, and 46 failed, including 36 non-graduates. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Alabama	(1893)	86.4
College of Physicians and Surgeons, Little Rock	(1909)	81
University of Arkansas	(1909)	76
Howard University, Washington	(1909)	79.2
Rush Medical College	(1889)	83.8
College of Physicians and Surgeons, Keokuk	(1899)	78.7
University of Iowa, College of Medicine	(1897)	90.2
University of Louisville	(1909)	78.2
Tulane University of Louisiana (1890) 88.8; (1908) 86.6;	(1909)	85
Ensworth Medical College	(1909)	82.8
Barnes Medical College	(1908)	83.2
Meharry Medical College	(1908) 75; (1909)	78, 75.4
Memphis Hospital Medical College	(1909)	81.4
University of Tennessee	(1909) 80.6,	84, 86.6
University of Nashville	(1909)	88.1
University of Toronto, Ontario	(1890)	91.4

FAILED

University of Arkansas	(1909) 62.1, 68.2, 69.1,	70.4
Medical College of Georgia	(1908)	53.8
St. Louis College of Physicians and Surgeons	(1908)	66.6
University of West Tennessee	(1909)	60.8
Meharry Medical College	(1908) 63.6; (1909)	63, 67.6

Vermont July Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Burlington, July 13-15, 1909. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 28, all of whom passed. Three were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1906)	80.3
Bennett Medical College, Chicago	(1909)	81.6
Baltimore Medical College	(1906)	82.5
College of Physicians and Surgeons, Boston	(1899)	80
Cornell University Medical College	(1900)	86.6
Long Island College Hospital	(1879) 75; (1906)	84.1
University and Bellevue Hospital Medical College	(1905)	96.6
University of Vermont (1897) 75; (1906) 78.2; (1907) 82; (1909) 79.4, 79.8, 81.1, 81.1, 82.1, 82.9, 82.9, 85.3, 87.1, 87.8, 88.1, 89.1, 89.1, 90.1, 90.1.		
McGill University, Montreal	(1907) 92.6; (1908)	89.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Tufts College Medical School	(1907)	New Hamp.
Albany Medical College	(1896)	New York
Columbia University, Coll. of P. & S.	(1883)	New Jersey

Massachusetts July Report

Dr. E. B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, reports the written examination held at Boston, July 13-15, 1909. Practical laboratory tests were also required. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 109, of whom 75 passed and 34 failed, including 7 non-graduates. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University	(1884) 85; (1887)	75
Georgetown University	(1908)	75.8
Yale University	(1907) 75.9, 77.2; (1909)	75
Medical School of Maine	(1908) 75.5, 78.2; (1909)	75.5, 81
Coll. of P. & S., Baltimore	(1907) 82.5; (1909)	75.6, 78.5
Baltimore Medical College	(1907) 75; (1909)	77.5
Johns Hopkins University	(1897)	85
Boston University (1908) 79.3; (1909) 75.2, 75.5, 75.8, 76.9, 77.2, 77.6, 77.6, 80.4.		
Tufts College Medical School (1902) 82.8; (1908) 75.2; (1909) 75, 75, 75, 75, 75.2, 75.3, 75.5, 75.5, 75.7, 75.7, 76.3, 77.2, 77.8, 78.2, 78.5, 78.4, 78.6.		
Harvard Medical School (1907) 81.7; (1908) 75.7, 81.2; (1909) 75, 75.5, 77, 79.4, 79.5, 79.7, 79.8, 80.2, 80.5, 81.1, 81.2, 82.2, 84.2.		
College of Physicians and Surgeons, Boston	(1909)	77.4
Columbia University, Coll. of P. & S.	(1902) 83; (1905)	76.2
Syracuse University	(1907)	77.5
Albany Medical College	(1909)	79.2
University and Bellevue Hospital Medical College	(1908)	78.4
Woman's Medical College of Pennsylvania	(1892)	75
Jefferson Medical College	(1881)	85
University of Vermont	(1891) 75; (1899)	77.3
Medical College of Virginia, Richmond	(1908)	78.8
McGill University, Montreal	(1900) 77.2; (1908)	83.3
University of Toronto, Ontario	(1908)	77
University of Naples, Italy	(1900)	75

FAILED

Medical College of Georgia	(1906)	43.9
Baltimore Medical College (1905) 66.2; (1908) 69.2, 70.2, 70.4, 70.7; (1909) 68.2.		
Maryland Medical College	(1909)	66.7
Tufts College Medical School (1908) 63.7, 69.7; (1909) 67, 69.5, 69.7, 70.6.		
College of Physicians and Surgeons, Boston (1908) 54.2; (1909) 61.8, 63.5, 68.		
Harvard Medical School	(1909)	61.8
Dartmouth Medical School	(1899)	61
Albany Medical College	(1898)	64.8
Columbia University, College of P. & S.	(1907)	70.4
University College of Medicine, Richmond	(1906)	61.8
Laval University, Quebec	(1905) 52.5; (1909)	66.5, 70.8
Medico-Chirurgical College, Lisbon, Portugal	(1902)	39.2

The Public Service

Medical Department of the Army

Changes for the week ended Oct. 9, 1909:

Duncan, W. A., capt., granted an extension of 10 days to his leave of absence.

DeWitt, Wallace, capt., ordered for examination at Washington, D. C., instead of San Francisco, Cal.

Church, J. R., major, granted leave of absence for 1 month.

Raymond, H. I., lieut col., granted an extension of 1 month to his leave of absence.

Smart, W. M., capt., granted leave of absence for 4 months, when relieved from duty in the Philippines Division.

Grubbs, R. B., capt., granted leave of absence for 1 month.

Walkup, J. O., M. R. C., ordered to active duty; will proceed to Fort Snelling, Minn. for duty.

Holland, J. H., M. R. C., ordered to active duty; will proceed to Fort Barrancas, Fla., for duty.

Sanford, J. L., M. R. C., relieved at Fort Barrancas, Fla., and ordered to Fort Caswell, N. C., for duty.

Enders, W. J., M. R. C., relieved at Fort McKinley, Me., and ordered to Fort Greble, R. I., for duty.

Gibson, P. W., M. R. C., ordered to active duty; will proceed to Fort Yellowstone, Wyo., for duty.

Pargon, J. A., M. R. C., relieved at Fort Yellowstone, Wyo., and ordered to proceed to his home.

Stallman, G. P., M. R. C., granted an extension of 15 days to his leave of absence.

Hereford, J. R., M. R. C., granted leave of absence for 1 month and 7 days.

Foley, T. M., M. R. C., granted leave of absence for 14 days.

Penrose, T. W., M. R. C., ordered to active duty; will proceed to Plattsburg Barracks, N. Y., for duty.

Medical Corps of the Navy

Changes for the week ended Oct. 9, 1909:

Tolfree, H. M., P. A. surgeon, ordered to the Naval Magazine, Iona Island, N. Y.

Allen, A. H., asst.-surgeon, ordered to the Naval Recruiting Station, Pittsburg, Pa.

Oursler, J. T., pharmacist, discharged from treatment at the Army and Navy General Hospital, Hot Springs, Ark., and ordered to the Naval Academy.

Smith, H. W., P. A. surgeon, detached from the Navy Yard, Boston, Mass., and ordered to duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

Eytinge, E. O. J., P. A. surgeon, detached from the *Wolverine*, and ordered to the Naval Hospital, Norfolk, Va.

Reed, T. W., asst.-surgeon, ordered to the *Wolverine*.
Shipp, E. M., surgeon, detached from the Naval Recruiting Station, New York, N. Y., and ordered to duty at the Naval Hospital, Philadelphia, Pa.
Raison, T. W., asst.-surgeon, ordered to duty at the Naval Hospital, Navy Yard, N. Y.

Public Health and Marine-Hospital Service

Changes for the seven days ended Oct. 6, 1909:

Banks, Charles E., surgeon, granted 1 day's leave of absence, Oct. 3, 1909.
Rosenau, M. J., surgeon, granted 2 days' leave of absence from Sept. 29, 1909, without pay.
Rosenau, M. J., surgeon, relieved as Director, Hygienic Laboratory, to take effect Oct. 1, 1909.
Anderson, John F., P. A. surgeon, detailed as Director Hygienic Laboratory, to take effect Oct. 1, 1909.
Billings, W. C., P. A. surgeon, granted 5 days' leave of absence from Oct. 6, 1909.
Holt, J. M., P. A. surgeon, granted 6 days' leave of absence from Oct. 4, 1909.
Boggess, J. S., P. A. surgeon, leave of absence for 7 days from Sept. 24, 1909, amended to read 6 days from Sept. 24, 1909.
Sweet, E. A., P. A. surgeon, leave of absence granted Sept. 9, 1909, for 21 days, amended to read 22 days from Sept. 9, 1909.
Guthrie, M. C., P. A. surgeon, granted 30 days' leave of absence from Oct. 10, 1909.
Wood, C. E., asst.-surgeon, granted 16 days' leave of absence from Oct. 5, 1909.
Lyon, R. H., asst.-surgeon, granted 2 days' leave of absence in September, 1909, under Paragraph 191, Service Regulations.
Altree, G. H., acting asst.-surgeon, granted 30 days' leave of absence from Oct. 2, 1909, without pay.
Cleborne, A. B., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 2, 1909, under Paragraph 210, Service Regulations.
Deerhake, William A., acting asst.-surgeon, granted 1 day's leave of absence in September, 1909, under Paragraph 210, Service Regulations.
Gleason, C. M., acting asst.-surgeon, granted 15 days' leave of absence from Oct. 1, 1909.
Gregory, G. A., acting asst.-surgeon, granted 10 days' leave of absence from Oct. 1, 1909.
Hume, Lea, acting asst.-surgeon, granted 10 days leave of absence from Sept. 30, 1909.
Hunter, W. R., acting asst.-surgeon, granted 14 days' leave of absence from Oct. 5, 1909.
MacCaffry, W. B., acting asst.-surgeon, granted 2 days' leave of absence in September, 1909, under Paragraph 210, Service Regulations.
Onuf, B., acting asst.-surgeon, granted 2 days' leave of absence from Sept. 21, 1909, under Paragraph 210, Service Regulations.
Sinclair, A. N., acting asst.-surgeon, granted 15 days' leave of absence from Sept. 5, 1909.
Walker, R. T., acting asst.-surgeon, granted 9 days' leave of absence from Oct. 18, 1909.
Wetmore, W. O., acting asst.-surgeon, granted 1 day's leave of absence, Sept. 20, 1909, under Paragraph 210, Service Regulations.

Health Reports

The following have been reported to the Public Health and Marine-Hospital Service, during the week ended Oct. 8, 1909:

SMALLPOX—UNITED STATES

District of Columbia: Washington, Sept. 18-25, 2 cases.
Georgia: Macon, Sept. 15-21, 1 case.
Illinois, general, Aug. 1-31, 40 cases; Danville, Sept. 18-25, 1 case; Peoria, Aug. 1-31, 9 cases.
North Dakota, general, July 1-31, 27 cases.
Texas, general, July 1-31, 92 cases; San Antonio, 2 cases.
Utah, general, Aug. 1-31, 101 cases; Salt Lake City, 17 cases.
Washington: Seattle, July 1-31, 2 cases.

SMALLPOX—FOREIGN

Chile: Valparaiso, Aug. 21-28, present.
China: Hankow, Aug. 18-25, 1 case.
Egypt: Cairo, Aug. 26-Sept. 2, 1 case, 1 death.
France: Paris, Sept. 4-11, 1 case.
India: Bombay, Aug. 18-31, 6 deaths; Madras, Aug. 14-20, 1 death.
Italy, general, Sept. 5-12, 7 cases, 5 deaths.
Java: Batavia, Aug. 14-21, 2 cases.
Mexico: Monterey, Sept. 12-19, 2 deaths.
Persia: Mazanderan, July 1-31, epidemic.
Portugal: Lisbon, Sept. 4-11, 1 case.
Russia: Moscow, Aug. 28-Sept. 4, 7 cases, 2 deaths; Riga, Sept. 4-11, 2 cases; St. Petersburg, Aug. 21-Sept. 4, 25 cases, 8 deaths.
Spain: Barcelona: Aug. 28-Sept. 11, 5 deaths; Valencia, 1 case; Vigo, Sept. 4-11, 2 deaths.

YELLOW FEVER

Brazil: Para, Aug. 28-Sept. 7, 9 cases, 6 deaths.

CHOLERA—INSULAR

Philippine Islands: Manila, Aug. 14-28, 3 cases, 2 deaths; Provinces, 342 cases, 246 deaths.

CHOLERA—FOREIGN

China: Amoy, Aug. 14-28, 39 deaths; Hankow, Aug. 18-25, 2 deaths.
India: Bombay, Aug. 18-31, 92 deaths; Calcutta, Aug. 7-21, 11 deaths; Madras, Aug. 14-20, 1 death; Rangoon, 6 deaths.
Japan: Karatsu, Sept. 1, 2 cases, on steamship Tain Maru; Mitajiri Aug. 22, 21 cases.
Korea: Sept. 2, epidemic in the northern part.
Manchuria: Liaoyang, Aug. 10-14, 1 death; Mukden, 1 death; Tashichiao, 1 death; Yinkou, 6 cases, 1 death.
Russia, general, Sept. 3-10, 716 cases, 257 deaths, Sept. 11-17, 946 cases, 251 deaths; St. Petersburg, Sept. 3-10, 167 cases, 45 deaths, Sept. 11-17, 246 cases, 87 deaths.

PLAGUE

Chile: Iquique, Aug. 18-Sept. 5, 6 cases in lazaretto.
China: Amoy, Aug. 14-28, 105 deaths; Hongkong, Aug. 14-21, 1 case, 1 death.
India, general, Aug. 14-21, 1,821 cases, 1,376 deaths; Bombay, Aug. 18-31, 64 deaths; Calcutta, Aug. 7-21, 31 deaths; Rangoon, Aug. 14-21, 28 deaths.
Japan: Kobe, Aug. 29-Sept. 4, 5 cases, 2 deaths.
Peru, general, Aug. 28-Sept. 4, 13 cases, 9 deaths.
Zanzibar: Zanzibar, July 23-24, 2 deaths.

Marriages

GEORGE A. DOWNS, M.D., to Mrs. Ella Thomas Seiling, both of Spokane, Wash., September 18.

HORACE L. HUSTED, M.D., Muscatine, Iowa, to Miss Mabel Merritt, of Iowa City, September 22.

HERMAN WINFORD BUNDY, M.D., Sadorus, Ill., to Miss Edith Stone of Tolono, Ill., September 29.

WILLIAM JAMES SWIFT, M.D., Chicago, to Miss Florence Josephine Lang, of Berlin, Ont., October 6.

ALBERT V. N. HENNESSY, M.D., to Miss Marie Cornelius, both of Council Bluffs, Iowa, September 29.

EDWARD E. NATHAN, M.D., Chicago, to Miss Julia Goldberg, of Deadwood, S. D., in Chicago, October 1.

ALFRED NICHOLAS MURRAY, M.D., to Miss Edna Auretta Schmidt, both of Chicago, September 30.

LOUIS EDMUNDS GUY, M.D., to Miss Anna Thea Louise von N. Rosenegk, at Richmond, Va., September 28.

ARCHIBALD G. THOMSON, M.D., to Mrs. Mary L. W. Wanamaker, both of Philadelphia, September 29.

LANSING Y. LIPPINCOTT, M.D., Metuchen, N. J., to Miss Louise W. Cragin, of New York City, September 22.

SIMS SEWARD HINDMAN, M.D., Glen Olden, Pa., to Miss Anna Maryland Larimore, of Seaford, Del., October 2.

ROGERS M. MCCOWAN, M.D., Knoxville, Tenn., to Miss Nellie Tittsworth, of Jefferson City, Tenn., October 5.

EDGAR HALL HAND, M.D., to Miss Nannie Williamson, both of Pineville, N. C., in Charlotte, N. C., September 22.

T. FLOURNOY WORTHINGTON, M.D., Myrtle Grove, La., to Miss Celeste Scudder, of Vicksburg, Miss., September 22.

EDGAR CLYDE JONES, Medical Reserve Corps, U. S. Army, to Miss Anne Katherine Laughlin, of Silver City, N. M., September 16.

HENRY ARTHUR CASSEBEER, JR., M.D., to Mrs. Eleanor Genevieve Paeake, both of New York City, in London, England, September 29.

Deaths

Harry Dorr Niles, M.D. Medical College of Ohio, Cincinnati, 1880; a member of the American Medical Association; in 1907, president of the Utah Medical Society; formerly president of the Western Surgical and Gynecological and Rocky Mountain Inter-State Medical associations; chief-of-staff of the Holy Cross Hospital, Salt Lake City; Utah; an honorary member of the state associations of Colorado and Idaho; died at his home in Salt Lake City, September 28, from cerebral hemorrhage, aged 53. The Salt Lake Medical Society, Salt Lake County Medical Society, and medical staff of the Holy Cross Hospital, at special meetings, adopted resolutions of regret and condolence.

George Edward Post, M.D. New York University, New York City, 1850; dean of the faculty of the Syrian Protestant College, Beyrout, Syria, Asia Minor; professor of surgery in the Syrian Protestant Hospital; and surgeon of the Johanniret Hospital, Beyrout; whose work in the medical missionary field won for him the decoration of the Osmanieh from the Sultan of Turkey, and of the Red Eagle and Knights of Jerusalem from Germany; author of text-books on botany, zoology, physiology, surgery, and materia medica, primarily for the use of his students; died in Beyrout, September 30, aged 70.

Christopher James Cleborne, M.D. University of Pennsylvania, Philadelphia, 1860; rear admiral U. S. Navy, retired; who entered the Navy in May, 1861, served through the Civil War, and during the Spanish-American War was in command of the U. S. Naval Hospital, Norfolk, Va.; served on sea duty for ten years and eight months, and on shore duty for twenty-five years and five months; was retired November 10, 1899 for incapacity resulting from incident of service; died at his home in Washington, D. C., October 2, aged 71.

Pasquale DeCunto, M.D. University of Naples, Italy, 1898; a member of the Colorado State Medical Society; a prominent Italian physician of Denver; who on account of his work in behalf of his fellow-countrymen was made a chevalier of the Order of the Crown of Italy by the King; died at the home of his mother-in-law in Brooklyn, N. Y., October 6, from bronchitis, aged 43.

John Joseph Quirk, M.D. Rush Medical College, Chicago, 1888; a member of the American Medical Association; adjunct professor of skin and venereal diseases in the College of Physicians and Surgeons, Chicago, and the Chicago Clinical School, secretary of the local board of U. S. Pension Examining Surgeons; died at his home in Chicago, October 4, aged 44.

John Newton Gregg, M.D. University of Michigan, Ann Arbor, 1862; of Whittaker, Mich.; professor of anatomy in his alma mater from 1862 to 1864; surgeon of the Twenty-fifth Volunteer Infantry during the Civil War; died at the home of his nephew in Fond du Lac, Wis., September 28, from heart disease, aged 73.

Daniel A. Smith, M.D. Eclectic Medical Institute, Cincinnati, 1855; surgeon of the Twenty-second Georgia Infantry, C. S. A., during the Civil War; mayor of Butler, Ga., and afterward state senator; later mayor of Anthony, Fla., and a member of the legislature; died recently at his home in Anthony, aged 79.

Henry A. Eidson, M.D. Rush Medical College, Chicago, 1880; a member of the Illinois State Medical Society; and of the local board of U. S. pension examining surgeons; died suddenly, while making a professional call at his home in Willow Hill, October 7, from hemorrhage, aged 62.

Charles Horace Evans, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1869; of Chicago; from 1897 to 1904, lecturer on materia medica in Hahnemann Medical College; died in Union Hospital, Chicago, October 4, after an operation for carcinoma of the stomach, aged 62.

Harold Verne Noyes, M.D. Medical School of Maine, Brunswick, 1881; a member of the York County (Maine) Medical Society; for many years superintendent of schools of Berwick; died at his home in Berwick, January 25, from cirrhosis of the liver, aged 50.

Charles Alonzo Cordiner, M.D. Baltimore (Md.) Medical College, 1901; of Portland, Ore.; formerly of Astoria, Ore., and secretary of the Clatsop County Medical Society; died in the Good Samaritan Hospital, Portland, September 25, from spinal meningitis, aged 29.

James Fulton, M.D. Jefferson Medical College, Philadelphia, 1859; a member of the Medical Society of the State of Pennsylvania; one of the oldest practitioners of Chester county; died at his home in New London, September 28, from angina pectoris, aged 77.

Edward Pierson Nicholson, M.D. University of Nashville, Tenn., 1861; a member of the Medical Association of the State of Alabama; died at his home in Valley Head, September 29, from the effects of aconite, taken by mistake for cough syrup, aged 74.

Ludwig Kohn, M.D. University of Vienna, Austria, 1887; a member of the Medical Society of the State of New York; died at his home in New York City, October 4, from the effects of carbolic acid, taken in mistake for a nerve tonic, aged 45.

Charles Parsons Beaman, M.D. New York Homeopathic Medical College, New York City, 1882; a member of the American Medical Association; physician to Cornell University Athletic Association, Ithaca, N. Y.; died October 6, aged 49.

Junius Kincaide Battle, M.D. Tulane University, New Orleans, 1883; a member of the Medical Association of the State of Alabama; city physician of Eufala, Ala.; died at his home in that city, September 28, from cerebral hemorrhage, aged 48.

Otto Frankenberg, M.D. Starling Medical College, Columbus, Ohio, 1870; for twenty years a member of the faculty of his alma mater; died at his home in Grand View, Columbus, September 29, from disease of the bladder, aged 63.

Julian Branch, M.D. Detroit (Mich.) College of Medicine, 1905; of Otisville, Mich.; a member of the Michigan State Medical Society; died in Harper Hospital, Detroit, after an operation for appendicitis, September 30, aged 32.

Charles Frederick Ferguson, M.D. Queen's University, Kingston, Ont., 1859; formerly member of Parliament for Leeds and Grenville, Ont.; died suddenly at his home in Kemptville, Ont., October 1, aged 76.

Riley S. Lycan, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1880; a member of the Illinois State Medical Society; died at his home in Paris, October 2, from pulmonary tuberculosis, aged 54.

Russell Clute, M.D. Albany (N. Y.) Medical College, 1903; of Maplewood, N. J.; physician to Christ's Hospital, Jersey City; died at the home of his sister in Amsterdam, N. Y., September 24, aged 33.

William Alexander Brooks, M.D. Jefferson Medical College, Philadelphia, 1850; a retired practitioner of San Antonio, Texas; died at a local sanitarium, September 18, from senile debility, aged 84.

Ernest Clark Gwinn, M.D. College of Physicians and Surgeons, Chicago, 1906; formerly of Sadorus and Paris, Ill.; died in Monrovia, Cal., from pulmonary tuberculosis, September 9, aged 28.

Joseph S. Biggart (license, Tenn., 1889); an eclectic practitioner of Carroll county, Tenn.; died at his home near Carter's Chapel, recently, and was buried September 26, aged 63.

Isaac M. Mulholland (license, Ohio, years of practice, 1896); for sixty-two years an eclectic practitioner; died at his home in Toledo, June 21, from edema of the lungs, aged 85.

H. F. McCoy, M.D. Columbus (Ohio) Medical College, 1879; formerly of Chauncey, Ohio; died at his home in Harper, Kan., from disease of the kidney recently, and was buried October 3.

William Turner Nolen, M.D. Hospital College of Medicine, Louisville, Ky., 1890; a member of the New Mexico Medical Society; died at Los Tanos, July 14, from tetanus, aged 40.

William A. Childress, M.D. Medical College of Georgia, Augusta, 1858; a Confederate veteran; and a pioneer citizen of Atlanta, Ga.; died at his home, October 1, aged 73.

James Lawson Davis, M.D. University of Alabama, Mobile, 1874; postmaster of Lafayette, Ala.; died at his home, September 12, from strangulated ventral hernia, aged 63.

Jabez Parkhurst Bidwell, M.D. Albany (N. Y.) Medical College, 1860; died at his home in Morrisonville, N. Y., March 17, 1908, after an illness of twelve years, aged 71.

Edmond B. Towne (license, practitioner, Iowa, 1887); since 1876 a practitioner of Coon Rapids, Iowa; died at the home of his son in that city, September 9, aged 80.

John Campbell Buell, M.D. University of Michigan, Homeopathic College, Ann Arbor, 1892; died at his home in Rives Junction, Mich., September 25, aged 39.

Albert Thibodeau, M.D. Laval University, Montreal, 1881; of Escanaba, Mich.; died in the Delta County Hospital, February 13, from carcinoma, aged 49.

Lewis E. Powell, M.D. Atlanta College of Physicians and Surgeons, 1899; died at his home in Waynesboro, Ga., September 26, from heart disease.

George Harold Grigsby, M.D. University of Louisville (Ky.), 1909; died at his home in West Baden, Ind., September 11, from typhoid fever, aged 26.

Henry B. C. Harris, M.D. New York University, New York City, 1848; died at his home near Wallace, Mo., May 1, from senile debility, aged 83.

Isaac W. Lewis, M.D. Castleton (Vt.) Medical College, 1848; died at his home in Apalachian, N. Y., September 19, aged 88.

Lute B. Irwin, M.D. University of Louisville, Ky., 1858; died at his home in Savannah, Tenn., September 29.

Joseph Francis Xavier Poitras (license, Mass.); died at his home in Brockton, Mass., October 3.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Dr. McCormack's Meetings Resumed

The public education work carried on by Dr. McCormack was inaugurated this fall with a number of meetings in Kentucky, followed by an address at Marion, Ind., on September 23. The Marion *News-Tribune* says: "The auditorium of the Presbyterian Church . . . was crowded last night with people who appreciated the privilege of hearing Dr. J. N. Mc-

Cormack of Kentucky as well as the fact that his talk did not abound in technical allusions beyond the layman's power of comprehension. The doctor told of what was being done by health boards and physicians generally and referred to the work which remained to be done, but which could not go on without the state's cooperation."

On his way east Dr. McCormack spoke at Greensburg, Pa., on September 25. Extended accounts of the meeting appeared in the local papers. The *Morning Review* says editorially: "His message is one that is clear and truthful and the manner in which he presents it is entertaining and convincing, with good hard facts to back his arguments." The Greensburg *Daily Tribune* says: "An audience entirely satisfactory with regard to size heard the lecture. . . . Fired by intense conviction in all he said, Dr. McCormack made a profound impression as he cited instances of widespread disease and infection resulting from lack of prevention." Dr. James P. Strickler of Scottsdale, secretary of the Westmoreland County Medical Society, writes regarding the meeting: "The society feels that great good has been accomplished. Dr. McCormack's talk in the afternoon to physicians was especially helpful."

The week of September 26 to October 2 was devoted to work in Vermont, meetings being held at Rutland, September 27, Burlington, September 28, St. Albans, September 29, Montpelier, September 30, St. Johnsbury, October 1, and Brattleboro, October 2. The Burlington (Vt.) *Free Press* says, regarding the meeting held at that place: "The address was one of the most interesting and important that has been delivered in this city for a long time." Arrangements have been made for meetings in New Hampshire, North Dakota, Minnesota and Wisconsin during the remaining months of the year.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Second Month—Third Weekly Meeting

DISEASES OF THE BRAIN

CEREBRAL HEMORRHAGE

PATHOLOGY: Changes occurring in arteries, leading to formation of aneurisms. Hemorrhages may be (a) meningeal, (b) intracerebral, (c) ventricular. Degenerative changes in clot, in gray and white matter.

INTRACEREBRAL HEMORRHAGE (CEREBRAL APOPLEXY)

PRIMARY SYMPTOMS: Onset unusually abrupt. Prodromata infrequent. Loss of consciousness, cyanosis, inactive pupils, stertorous breathing, relaxed sphincters, motor loss, conjugate deviation of eyes and head. Development of hemiplegia, sensory disturbances, reflexes, trophic changes. Diagnosis of lesion at (a) cortex, (b) internal capsule, (c) crus, (d) pons, (e) cerebellum.

SECONDARY SYMPTOMS: Muscular rigidity, contractures, increased reflexes, atrophy, athetosis, arthropathies, characteristic attitude and gait. Course of disease and prognosis.

CEREBRAL EMBOLISM AND THROMBOSIS (CEREBRAL SOFTENING)

EMBOLISM: Etiology, sex, age, endocarditis, atheroma of aorta, in puerperium.

THROMBOSIS: Etiology, age, sex, infections, cerebral embolism, arteritis and aneurisms.

SYMPTOMS OF CEREBRAL SOFTENING: Onset sudden (embolism) or gradual (thrombosis). Symptoms due to blocking (a) of vertebral or basilar artery, (b) posterior cerebral, (c) internal carotid, (d) middle cerebral, (e) anterior cerebral. Differential diagnosis in cerebral hemorrhage and thrombosis.

Society Proceedings

COMING MEETINGS

Amer. Association of Railway Surgeons, Chicago, October 20-22.
American Public Health Association, Richmond, Va., October 19-22.
Hawaiian Territorial Medical Society, Honolulu, November 19.
Kentucky State Medical Association, Louisville, October 19-21.
Medical Association of the Southwest, San Antonio, Tex., Nov. 9-11.
Nevada State Medical Association, Goldfield, November 2.
Southern Medical Association, New Orleans, November 9-11.

INDIANA STATE MEDICAL ASSOCIATION

Sixtieth Annual Session, held at Terre Haute, Oct. 7-8, 1909

The President, DR. GEORGE D. KAHLO, French Lick, in the Chair

Officers Elected

The following officers were elected for the ensuing year: President, Dr. T. C. Kennedy, Shelbyville; first vice-president, Dr. E. M. Van Buskirk, Fort Wayne; second vice-president, Dr. Eugene Hawkins, Green Castle; third vice-president, Dr. Theodore Potter, Indianapolis; secretary, Dr. F. C. Heath, Indianapolis; treasurer, Dr. David W. Stevenson, Richmond; delegates to American Medical Association, Dr. A. C. Kimberlin, Indianapolis, and Dr. C. H. McCully, Logansport; alternates, Dr. Fred A. Tucker, Noblesville, and Dr. J. Rilus Eastman, Indianapolis.

Fort Wayne was selected as the place for holding the next annual meeting.

Defense of Malpractice Suits

A committee of three was appointed for the purpose of thoroughly considering and investigating from a legal standpoint if it is feasible to establish a fund for the purpose of defending malpractice suits.

Pure Food and Drug Legislation

The following preambles and resolutions were adopted:

WHEREAS, The Indiana State Medical Association recognizes the great work that is being done in protecting the health of the people and preventing the fraudulent sale of foods and drugs by the enforcement of the Food and Drug Laws; and

WHEREAS, It is apparent that certain manufacturing interests are endeavoring to nullify such legislation, and to harass and hinder the officials in the enforcement of the law; therefore, be it

Resolved: That the Indiana State Medical Association expresses its confidence in the Indiana State Board of Health to resist any effort made by manufacturers or others, which may in any way weaken the efficiency of the pure food and drug law, or restrict the scope of its operation; and be it

Resolved: That the Indiana State Medical Association does not accept the decision of the Referee Board appointed by ex-President Roosevelt as final, and that it recommends to the President of the United State and the Secretary of Agriculture that further investigations conducted on the broadest lines be continued, that the people and the food producer may know the value, the necessity or harmfulness of any or all food preservatives; and, be it further

Resolved: That the Indiana State Medical Association recognizes and emphatically endorses the work of its fellow-citizen, Dr. Harvey W. Wiley, in his untiring efforts extending over many years to obtain for the people pure foods and pure food legislation, and that it expresses its appreciation of his work by sending him a copy of these resolutions.

Estivoautumnal Malaria

DR. G. D. MARSHALL, Kokomo: Seventy-five per cent. of the applications for pensions made by the Spanish-American War veterans were for disabilities due to malarial infections received while in the service, diarrhea and gastrointestinal troubles with nervous breakdown being the alleged causes of disability, which really was a chronic malarial manifestation. I have examined a number of these men and found plasmodia in the blood and obtained a history of recurring attacks once or twice a year ever since the original infection was received while in the service. The burden of diagnosis in these cases rests on a microscopic examination of sputum and blood and the value of these is a matter of individual skill and sincerity. If one has not the technical skill to make the microscopic examination, the chances are that blood films will be so poorly made that examination by an expert would be very unsatisfactory. Quinin is a specific for this disease and will give relief from the symptoms in less time than any other drug if given in sufficient dosage and in a form in which it is absorbed. From 10 to 80 grains should be given daily in combination with an acid to render it soluble. There is usually a severe reaction in the chronic patient who has not received

antimalarial treatment. The rapid destruction of the parasites and the breaking down of the corpuscles that contain them cause the formation of enormous quantities of bile, and bilious vomiting is very likely to follow unless the bowels are moved freely. Calomel and phenolphthalein serve this purpose. Iron and quinin should be given for the color test, for hemoglobin may show from 80 to 100 per cent., but this does not signify that the cells are rich with hemoglobin, as there are so many crippled cells that the available oxygen-carrying power of the blood is diminished, giving rise to shortness of breath. Quinin tablets are so insoluble that they should not be depended on. Treatment should be continued for months, especially in severe chronic cases. Recurrent and primary attacks are much easier controlled. I do not make any restrictions in diet, but encourage the patient to take nourishing food whenever the stomach will tolerate it. Cupping or the local application of solidified liniment in which camphor and menthol are incorporated gives relief from the pains due to the neuritis.

DISCUSSION

DR. W. T. S. DODDS, Indianapolis: It is impossible to find the malarial parasites in the peripheral circulation in the estivoautumnal cases after any considerable length of time with any decided determination. From observations which I have been able to make, dating back to 1898, the time when the soldiers returned from the south, as well as the observations of Craig, of the Public Health and Marine-Hospital Service, on the Pacific Coast, I am led to believe that one dose of quinin will drive the parasites from the peripheral circulation, so that they would not be found once in a thousand cells thereafter, unless puncture of the spleen is made. The difficulty of diagnosing malaria from the blood, especially stained blood, is very great. It is particularly difficult in the dry specimen and it requires several examinations before one can prove or disapprove malarial fever, particularly of the estivoautumnal variety. Perfectly normal blood will give one observations which are distinctly disturbing, and repeated examinations are required. While Wright's stain for blood is admirable, at the same time it does not fulfill all the requirements of a blood stain. As to the question of the breeding of mosquitoes in malaria, there is no doubt about that, but there seems to be some question with regard to previous infection. All cases of chills and fever accompanied with gastrointestinal disturbances are not malaria by any means, even if the fever disappears under quinin. A fever which does not respond to large doses of quinin in two or three days is not malarial.

DR. SIMONS, Indianapolis: I agree regarding the difficulty of diagnosing malaria with the stained specimen. Fresh blood, when it can be properly obtained, is much more reliable and much more satisfactory to the man who is making the examination than a stained specimen. One who has examined a great many smears can acquire a degree of aptitude in that kind of work, so as to be able to recognize the parasites without any great degree of error. One should get acquainted with the stain. The form of the organism and the manner in which the blood was taken have a great deal to do with the difficulty. This summer, at the state laboratory, we had seventeen samples of blood that showed the malarial parasite, but only two could be diagnosed as estivoautumnal. Only two showed the crescent form and both of these patients came from outside of the state; one from Arkansas and the other from St. Louis. About twelve out of the seventeen obtained their infection, according to the statements of their physicians, in the state of Indiana, and most of them came from along the Wabash River. For some reason or other there seems to be an increase in the amount of malaria that has occurred in Indiana during the past summer and just why that is I hardly know.

DR. HUGO O. PANTZER, Indianapolis: It takes a courageous spirit nowadays to assert that malaria is still prevalent to any great extent in Indiana. I have found malaria all these years and have contended for its presence and have encountered denial and ridicule. I wish to speak in support more particularly of cases of malaria that are distinctly of the estivoautumnal type. When the malarial parasites are in possession of an individual, they are commonly entrenched with him. I mean by this that when the malarial plasmodium of the estivoautumnal type is once entrenched in the ordinary case, they will continue through life. The estivoautumnal type of fever is present with us almost all the time in those individuals who had it in their youth.

DR. B. W. RHAMY, Fort Wayne: The only cases of malaria, with the exception of one, that I have found have come from out of the state; as, for instance, from Missouri and Mississippi or from the Spanish-American War.

DR. G. D. MARSHALL, Kokomo: The Wright stain is recommended by all authorities that I have read on blood examinations for staining purposes in cases of malaria. As to finding the parasites in the peripheral circulation, they are expected to be found there. I do not recall having read any authority on this subject who would hazard the puncturing of the spleen to obtain blood, as it is too dangerous an operation and is so considered by men who have written on the subject. I believe the parasites can be found in the peripheral blood.

Value of the Leucocyte Count

DR. B. W. RHAMY, Fort Wayne: A differential count is of much more value than a total count. The differential and total count, taken together, may, and often do, give much valuable diagnostic and prognostic aid. The differential count gives an index of the amount of toxic absorption. A high neutrophile count, with a high total count, indicates either an acute systemic infection, a gangrenous process, or suppuration. A neutrophile count above 80 per cent. usually means suppuration. A low polynuclear or total count, in the presence of a severe process, denotes low resistance, proportionate to the decrease. An increase of large lymphocytes, accompanied by an eosinophilia, is presumptive evidence of syphilis in a suspected case. An increase of large lymphocytes and transitional cells, with a diminution of neutrophiles, small lymphocytes and eosinophiles, in the presence of a continued fever, is strong evidence in favor of typhoid. Leucocytic crises may occur in typhoid. Typhoid usually has a leucopenia during the first week; after the first week, leucocytosis is common. A small lymphocytosis may be part of the early pathological changes in thyroidism. The rôle of the transitional cells seems to favor the theory that the large mononuclear cell is the common origin of all forms of leucocytes.

DISCUSSION

DR. H. R. ALBURGER, Bloomington: I wish to call attention to the fact that the average physician must depend on the laboratory worker to make these compilations and do this work for him. In the first place, in making a blood count I find in my laboratory work that a great many practicing physicians, skilful men, do not realize that blood counting cannot be done in a laboratory one hundred miles away from the case. It requires technical skill and rapid careful technical work to make a good blood count, and the physician who intends to follow up his cases to the ultimate clinical analysis should familiarize himself with the technic for making blood counts.

DR. H. H. THOMPSON, Noblesville: Those of us who make our own smears are apt to find the blood at one end of the slide thicker than the blood at the other end of the slide, and I wish to emphasize this fact in the differential count, and how much it means to any one that will take the least time and trouble to look into the matter. Lymphocytes in excess are an indication of resistance. They are an indicator of whether or not the body will be able to survive the infection. When we go into the matter of the differential count we are able to make a better prognosis in the disease with which we have to deal.

DR. A. C. KIMBERLIN, Indianapolis: The numerical count is not reliable unless one is able to estimate correctly the amount of resistance or vital force of the patient himself.

DR. B. W. RHAMY, Fort Wayne: Ordinarily a specimen is sent to the laboratory with the request for a blood examination and report. The laboratory man should have at all times a history of the case and be enabled to confer with the clinician with regard to his findings and the clinical findings in order to do good and satisfactory work.

The Treatment of Pulmonary Hemorrhage

DR. THEODORE POTTER, Indianapolis: The first and most important thing to secure in the presence of pulmonary, as of other hemorrhages, is rest and quietude of body and mind. The patient, except in the unusual cases of profuse bleeding from a ruptured large vessel or aneurism, may be assured that there is little danger; that the loss of a few ounces or a pint of blood will of itself do little harm and may be beneficial in relieving congestion. Thus the fright may be allayed and nervous excitement lessened. If the bleeding may be in any degree profuse, or be continuous or recurrent, absolute bodily quietude should be enjoined. What are the other things which may help to arrest bleeding? They lie chiefly in four directions: to lower the blood pressure in the lungs; to divert the blood from the lungs on the principle of revulsion, to immobilize the bleeding lung as far as practicable, and to use such artificial measures as are safe to promote the general and local quietude. The last indication is best met by opium.

DISCUSSION

DR. G. T. MCCOY, Columbus: Some hospitals report as high as 10 per cent. of fatal cases of tuberculosis terminating by hemorrhage, and others as low as 1 per cent. of fatal cases. One cannot always determine the location of the hemorrhage, and the condition of the patient forbids anything but a very slight examination, confined to auscultation only for fear of adding to the seriousness of the case. Hemorrhage may be the first indication that any lesion of the lungs exists, but it does not in any manner indicate the extent or duration of the disease. It may come from a tuberculous infiltration of the vessel wall, or a destruction of tissue immediately surrounding the vessel and be the only part of the lung diseased. When it is the first manifestation of a lung lesion a serious hemorrhage need not be expected. When called to a case of pulmonary hemorrhage the physician should at once attempt to gain the confidence of the patient, allay his fears, and obtain quiet not only of the patient but of his surroundings. Quiet of mind and body is essential. The lowering of the blood pressure is of prime importance. This I generally secure by the administration of nitroglycerin in 1/100 grain tablets, dissolved on the tongue, or one minim of a 1 per cent. solution of nitroglycerin administered hypodermically. I follow this with veratrum viride until a marked impression is made on the pulse and seek to maintain this condition for several hours. If there is evidence of collapse, this treatment is not indicated. I seldom recommend opiates.

DR. JOSEPH COLLINS, New York City: It has been my practice in hospital work, where I see a large number of cases of tuberculosis, to do nothing in the treatment of hemorrhage from the lungs save to give a dose of nitroglycerin, and if there is any considerable stress of mind or body in the shape of cough or physical agitation to combine the nitroglycerin with small doses of morphin. In the practice of internal medicine ergot has done more harm than good. In the past it has been used as a remedy for almost every spinal cord disease, and I hope it will be abolished except for use in bringing about contraction of the uterus.

DR. F. B. WYNN, Indianapolis: I believe that generally we can tell where hemorrhage comes from in these cases. In the first place, the type of hemorrhage may be noted often times in the sputum in which the masses are simply tinted, pin-head sized or larger masses of blood than the mucus. Such minute hemorrhages may come and generally do come from the bronchial tubes; that is to say, in conjunction with any pulmonary condition in which there is a paroxysm of coughing, with prolonged effort and inducing passive congestion of the mucosa of the bronchial tubes, tiny capillaries may rupture and minute hemorrhages of this character occur. These paroxysms occur when there is associated laryngeal tuberculosis, with prolonged whooping cough-like paroxysms. The hemorrhage the essayist discussed is a hemorrhage *en masse*, and such hemorrhages must come when there is destruction of lung tissue. These big hemorrhages generally mean abscess or necrosis of lung tissue. In the treatment quiet and rest are very essential. This can be induced by morphin and other measures.

DR. T. POTTER, Indianapolis: I should have said something about the use of the nitrates in my paper, as they seem to be coming into use more of late than formerly. A great many practitioners speak of them in reducing blood-pressure, and they are especially noted for their quick action; yet from my experience, where there are no contraindications to their use, I am inclined to believe that such drugs as aconite and veratrum are valuable.

(*To be continued*)

AMERICAN ROENTGEN RAY SOCIETY

Tenth Annual Meeting, held in Atlantic City, N. J., Sept. 23-25, 1909

The President, DR. GEORGE C. JOHNSTON, Pittsburg, Pa., in the Chair

Officers Elected

The following officers were elected for the ensuing year: President, Dr. George E. Pfahler, Philadelphia; vice-presidents, Drs. Vernon J. Willey, Rochester, Minn.; C. E. Coon, Syracuse, N. Y.; R. D. Connell, St. Louis, Mo.; and R. D. Hammond, Providence, R. I.; s cretary, Dr. Percy Brown, Boston; treasurer, Dr. Charles F. Bowen, Columbus, Ohio.

Detroit was selected for the next place of meeting, time of meeting to be decided later.

Journal to Be Established

It was decided to substitute for the annual volume of transactions a quarterly journal, to be devoted entirely to the use of the Roentgen ray in medicine. The first issue of the journal will appear about December 1. The editor is Dr. P. M. Hickey, Detroit, Mich.

Roentgen-Ray Examination of Mastoid Region

DR. SIDNEY LANGE, Cincinnati, Ohio: A skiagraphic examination of the mastoid region is very valuable as a means of diagnosis in mastoid disease. The skiagraph is made with the patient lying on the side, the rays being projected from above and behind, and pointing toward the mastoid of the opposite side. An exposure of from five to ten seconds is made, both sides being skiagraphed for purposes of comparison. The most reliable results were obtained in chronic cases, the skiagram usually showing more or less marked sclerosis with haziness or obliteration of the mastoid cells. In several instances the skiagraphic diagnosis was confirmed by operation. Only a small number of acute cases were examined, and no conclusions could be drawn. Severe acute cases, accompanied by extensive bone destruction, were easily recognized. In two cases, abscess of the mastoid was diagnosed and verified by operation. There must be cooperation between radiographer and otologist for the purpose of comparison and verification of the findings.

DISCUSSION

DR. CHARLES F. BOWEN, Columbus, Ohio, cited an instance in which a skiagraphic examination would have aided the operator to avoid entering an anomalous lateral sinus during an operation, thus obviating a second operation.

DR. W. F. MANGES, Philadelphia, pointed out the advantage of stereoscopic radiography in this connection, and exhibited skiagraphs of a number of cases.

Relations Between Bodily Deformity and Gastrointestinal Irregularities

DR. PERCY BROWN, Boston: Two classes of cases may be considered under this head: (1) the class in which an apparent postural deformity overtops in importance subjective signs; (2) a class in which gastrointestinal symptoms continue to exist because of failure to recognize the real cause of the trouble. The Roentgen method of diagnosis is applicable in each class. Etiologically, there must be considered (1) accidental deformities, and (2) wilful disfigurement of the body. For instance, in cases of lateral spinal curvature, the stomach may be so outlined as to make it appear almost inconceivable that ordinary peristalsis was not interfered with seriously. in kyphotic asymmetries of the spine, especially of tuber-

culous origin, no appearances in the shape and position of the stomach was found differing from those in scoliotic cases. It would seem, therefore, that the torsion of the stomach commonly seen in the scoliotic cases has a certain bearing on the malposition of the stomach. Other cases in which alimentary imperfections are often found are those in which occupation postures and other postural habits are the cause of the trouble, but in which the perversion had not become structural. In this class are the milder types of postural lateral spinal curvature, round back, etc. The wilful disfigurements of the body leading to visceral ptoses are the result of tight lacing, etc.

DISCUSSION

DR. CHARLES M. HAZEN, Richmond, Va., pointed out that in most of these cases there is a lack of tone in the spinal column which he thought had been overlooked as a cause of ptosis.

Roentgen-Ray Diagnosis of Achondroplasia and Cretinism

DR. HENRY K. PANCOAST, Philadelphia: I found striking characteristic radiographic features in a case of achondroplasia which I had the opportunity of observing. There was decided deficiency in the epiphyseal development of the shafts of the extremities, making them appear short, both actually and relatively, in comparison with other long bones. They also appeared to be too thick for their length. There is an abrupt expansion of the diaphysis in the neighborhood of the diaphyso-epiphyseal junction, a rather abrupt bowing of the lower end of the femur, and the upper end of the tibia, with a fairly well-developed head of the femur, a poorly developed short, thin neck, and a far better relative development of the trochanter. The appearance of the hands and feet is also characteristic, the bone being exceedingly cancellous in structure. There was also a tendency to symmetrical osteomatous growths on the long bones of the upper extremities, and a deficient and irregular ossification and growth at the epiphyseal ends of the diaphyses, particularly in the knee joint. Cretinism, on the other hand, does not present any characteristic radiographic features.

DISCUSSION

DR. CHARLES LESTER LEONARD, Philadelphia: I examined a case of cretinism about eight years ago in which I found distinct and separate foci of ossification in the ends of the tibia and the femur. There appeared to be three rings of ossification in the small bones of the hands and feet. This might be a point of differentiation between cretinism and rickets, and cretinism and achondroplasia.

DR. P. M. HICKEY, Detroit: I have found a corresponding lack of development in the bones and in the mental capacity of the patient, so that a patient with the bones of a 5-year-old child also cerebrated like a child of that age.

(*To be continued*)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Fifty-ninth Annual Session, held in Philadelphia, Sept. 27-30, 1909

(*Continued from page 1217*)

Resolutions Adopted at the Busineess Meeting

CONDEMNATION OF PRESERVATIVES IN FOODS

The following resolutions were unanimously adopted by the Medical Society of the State of Pennsylvania on September 30, having been introduced into the house of delegates two days previously and considered on three separate days:

WHEREAS, Public opinion has become much aroused over food adulteration; and

WHEREAS, Diverse opinions have been expressed concerning the use of preservatives in the manufacture of foods; and

WHEREAS, Certain preservatives make possible the use of foods that have begun to decay; be it therefore

Resolved, That the Medical Society of the State of Pennsylvania, in convention at Philadelphia, declares that it condemns the use as food preservatives of benzoic, boric and salicylic acids and their compounds, and all other similar chemicals, as, in the opinion of this society, such preservatives are unnecessary and are detrimental to the public health; and be it further

Resolved, That this society is opposed to adulteration of food of any kind whatsoever; and be it further

Resolved, That this society indorses the stand taken by the American Medical Association in its fight against food adulteration, and indorses its action in appealing to Congress for immediate amendment of the national Food and Drugs Act; and be it further

Resolved, That this society indorses the stand taken by Dr. Harvey W. Wiley in his campaign for pure food and pure food legislation; and be it further

Resolved, That the society commend the daily newspapers and individuals who have taken a stand against artificial food preservatives and give them added encouragement to continue their fight.

NOSTRUM ADVERTISING

The following resolution was passed:

WHEREAS, It is the unanimous opinion of the medical profession that the disuse of nostrums and "fake cures" of incurable diseases can be accomplished only by the education of the public against their use; be it

Resolved, That the Medical Society of the State of Pennsylvania highly commend those newspapers and journals who refuse all nostrum advertisements and condemn such so-called remedies in their news columns.

Fourth of July Celebration Condemned

The report of the Committee on Independence Day fatalities contained the following recommendations:

Legal control of the importation, manufacture and sale of explosives used only for purposes of celebration; municipal control of the use of firearms and explosives and of fireworks during the Fourth-of-July season; municipal participation in substitution methods; the organization of societies for both control and substitution purposes; the most complete possible systematic use of tetanus antitoxin and other medical measures in both the prevention and treatment of tetanus and sepsis; the setting apart of a day in all public schools, academies and colleges during the last days of the session before the summer holiday, to make all possible provision against the evil; the allusion to the matter in all churches on the last Sunday preceding Independence Day; the continuance and increase of the agitation in the newspapers; the continuance of the work by this society.

Approval of Board of Public Instruction

The Committee on Scientific Business recommended endorsing the work of the Board of Public Education of the American Medical Association, and the formation of a committee to cooperate in the undertaking.

Venereal Diseases

DR. LAWRENCE LITCHFIELD, Pittsburg: It is probable that in this country the percentage of the population infected with venereal diseases does not vary greatly from that in Germany, where on any single day about 100,000 people are under treatment. The state or municipality has the same moral obligation and the same financial interest in the control of venereal diseases as in the control of any other contagious disease. Any attempt at police control of prostitution without the European system of registration would be futile and impracticable for our American cities. This may not be a misfortune for it is not yet demonstrated that better results cannot be obtained by social organization against the social evil. All who have given much thought to the subject agree that the only efficient method consists in the education of the public, the establishment of free dispensaries for the treatment of venereal diseases with every possible inducement to get the infected to accept the treatment thus offered, the repeal of bad laws and the adoption of new ones which work only for the desired end. I urge the organization, from our present local societies, of an American association for the prevention of social diseases, with branches and dispensaries in all our cities.

DISCUSSION

DR. ELLA N. RITTER, Williamsport: This subject is one of the last that we as physicians have earnestly considered. Eighty per cent. of children are born blind and a large number are stillborn from this disease. Education is the specific at our hand and we should make a better attempt than in the past to do something along this line.

DR. S. NELSON WILEY, Norristown: I have it on the authority of one of the greatest gynecologists in this city that the great mass of gynecologic abdominal work is due to gonorrhea. If we know that a man is not fit to marry a pure girl it is our business to say so. For a number of years, in the

few cases I do treat, I have made it a point to say to the patient that he must not marry until he has the very best evidence of cure. Some of them say: "I will marry when I please." "No," I say, "you will not." The preacher, when performing the ceremony, asks if any one knows any reason why the marriage should not take place. I have a threat standing over four men to-day that I will stand up in any house or any church and say that they are not fit to marry.

DR. A. E. ROUSSEL, Philadelphia: After a rather extensive observation of the methods employed abroad, more particularly in Paris, in the registration of cases of venereal diseases, I can not but believe that those methods possess advantages over the ones in this country. I hope the time is not far distant when cases of this kind will be required by law to be reported, and I am persuaded that such requirement will aid greatly in the suppression and diminution of this terrible infection. I take it that on the man about town, or the younger man, the possibility of having his name noted on the books of the board of health, would have a very deterrent effect.

DR. C. L. STEVENS: Do I understand that Dr. Roussel favors police regulation of prostitution in this country?

DR. ROUSSEL: I do.

DR. STEVENS: Would you limit that to the female prostitute, or would you include the male prostitute?

DR. ROUSSEL: I think the first step in this direction will be on the side of the weaker sex; ultimately I should be in favor of the registration of both sexes.

DR. STEVENS: Have you the statistics in this country where police supervision has been attempted?

DR. ROUSSEL: I will not say of this city, but I fail to imagine that conditions are so different that the results obtained abroad should not be obtained here.

DR. LOWELL M. GATES, Scranton: I imagine that if the method suggested by Dr. Roussel were carried out it would drive these people for treatment to the illegitimate practitioner, who would shield them from report. In the matter of education I believe we should make the symptoms and consequences of this disease so plain that every woman would know the cause of her trouble in less than a month after marriage, and be in a position to charge her husband as the cause of the infection. For fear of causing trouble we have been too timid in advancing facts. In addition to this we should be willing to stand up and threaten these men. Let us protect humanity!

SYMPOSIUM: THE PROBLEM OF THE PUBLIC SCHOOL FROM THE MEDICAL POINT OF VIEW

The Studies and Their Effects on the Nervous System

DR. LAWTON M. HARTMAN, York: 1. The subject of nervous diseases among the school children has not received sufficient attention. 2. There is now no definite knowledge of the part played by any particular study or group of studies or any school occupation in the development of nervous affections among school children. 3. There is a large and varied group of nervous manifestations occurring among school children, the development and continuation of which alterations from the normal are attributed to school work and especially to school overwork. 4. Before the age of puberty overwork at school is not a large factor. 5. After the age of puberty, especially among girls, in schools where strong efforts to excel are expended, overwork at school plays a much more definite part. 6. The importance of medical inspection of schools is becoming universally recognized. 7. Broader legislation should be urged for more accurate and more powerful medical inspection. 8. The introduction into the higher educational institutions of departments for the study of the child as an entity has and will produce results most practical, valuable and interesting. 9. The earlier recognition of variations from the normal existing among school children with the institution of medical and educational treatment would accomplish much. 10. The individual management of those pupils nervously affected is the only rational way of providing for the proper and continued education and supervision of the health of the school youth.

School Houses and School Habits and the Development of the Body

DR. THOMAS GRIER SIMONTON, Pittsburg: Physical culture in the school should be taught so that it will become the habit of adult life. Posture, study habit, and concentration are affected by physical culture and correct breathing. The best results are to be obtained by promoting the action of the lungs and digestion and the function of the skin. A foot tub, or wash basin with warm or cold water, soap and a rough towel are procurable in nearly every home, and the pupils should be taught that a daily sponge bath, followed by friction of the skin with a towel, is what is required of them at home, while deep breathing and physical culture is taught them at school. Warden Lewis of the Allegheny county jail at Pittsburg recently inaugurated daily open-air physical exercise for his 800 prisoners. Asked what has been the result, he replied, "better discipline, better digestion, more contentment, less medicine." The best results are obtained only when the physical instructors of the children are living examples of the system employed. Catch-penny stores near schools, with their cheap cakes and candy, their obscene postal cards and literature, are grave dangers. Statistics show the relative ratio between cigarette users and non-users in standing, truancy and juvenile court subjects.

Medical Oversight

DR. H. HERBERT HERBST, Allentown: The paper is a treatise on medical oversight of the public schools, not so much a detail and description of the method itself, but a plea for more interest and a larger introduction of this work into the public schools of this country. The latest reports show the growing sentiment in favor of this work, its importance, and its appreciation by the general public. The measure is not, however, growing throughout the United States in proportion with the amount of good that has been accomplished.

The Knowledge of Most Value to School Children

DR. GEORGE W. WAGONER, Johnstown: The common school system of education is the most important element in the nation's life, providing the only education the vast majority can hope for. Ten years is the limit of time most children have to devote to school. Advanced education and college training can be enjoyed by only a very few. In considering the knowledge which is most valuable, the first and most essential is a thorough knowledge of the alphabet. There are few who leave school and enter on the active duties of life with a working knowledge of the possibilities, the flexibility, and the limitations of the alphabet as a whole, or the correct sounds of its individual elements. The next essential elementary knowledge is spelling. The next is reading—the ability to read with the spoken voice in a clear, distinct and orderly manner so as to convey to the listener the full meaning and beauty of the printed page. Writing is the fourth essential. Arithmetic, the art of reckoning, is another of the elementary essentials of all knowledge. By its principles we reckon the relations between all material objects, we define space, and comprehend time. The development of these units with the subsequent addition of the dependent units, history, grammar, literature, civics, and geography gives a coherent fund of knowledge which is called elementary education. Such education the child has the right to receive from the state. If each pupil is well-grounded in all these branches he has what democratic society undertakes to give him, the essential elements of all human culture, and with them the door is opened and he is at the threshhold of every department of human activity.

Discussion on the Public School Problem

DR. CHARLES P. STAHR, Lancaster: Medical men can do much toward furthering the work of medical inspection in schools, and it is to them that the children of the state must look for benefit in physical, mental and medical ways. I believe that chorea among school children is attributable to an inherited, unstable nervous temperament coupled with the desire to outrank other children rather than to the school curriculum. Dr. Hartman's idea of a sort of clearing-house for deficient children coincides with a pet theory of mine. If we had such a psychologic laboratory under the care of per-

sons trained in child study we could help those children who never get beyond the primary grades for five or six years.

DR. EDWARD B. HECKEL, Pittsburg: As has been mentioned, the school boards are absolutely supreme. They fix the tax rate and spend the money as they please, and it is usually spent in putting up very fine buildings which are pointed to with pride as the standard of the education in that community. The public school teacher receives too little compensation. No attraction is offered to young men and young women as teachers. Much of the teaching is faulty and the child, who is an adept in discerning faulty teaching, loses respect for the teaching and the teacher. Especially is this true relative to the evil effects of tobacco and alcohol as taught in the public schools. It would be easy for the teacher to teach that tobacco is always a poison; that though some people stand it very well, others stand it very badly; that it sometimes produces blindness. These are facts which will bear the closest scrutiny.

DR. WALTER S. CORNELL, Philadelphia: The medical inspection of school children rests on three facts: It is important to the teacher because it has a direct relation to the child's education; to the physician, because the health of the child largely determines the health of the adult afterwards; to the state, because the efficiency of the citizens depends largely on their health and physique. In the nervous conditions of school children I agree that the school curriculum is of minor importance compared with other factors. The example of New Jersey should be followed in having a conference between the educational authorities and the medical profession to determine a proper balance.

DR. E. BOSWORTH MCCREADY, Pittsburg: That the medical inspection of schools will soon be universal is the wish of every one with the welfare of humanity at heart. There should also be provision for taking care of the child which may be backward after the physical defect has been remedied.

DR. BATTEN: In the education of our young people we should ascertain to what they are adapted and educate them along those lines.

DR. HAROLD B. WOOD, Philadelphia: Inspection of boarding schools should not be overlooked and physicians should help to patronize those schools in which health conditions are known to be good.

DR. GUMP, Bedford: It is impossible for children at the early age at which they are sent to school, to study as they are expected without being overtaxed. If they were allowed to run wild until 8 years of age before entering a schoolroom, until then being taught by their parents, they would be better mentally and physically.

DR. HEFFNER, Pottstown: In the cities there are all sorts of attractions that affect the children more than study. Not many children are made sick by overstudy. I am the father of six boys, and none of them ever suffered from overstudy, but I must also say that most of those boys were raised in the country.

DR. JOHN C. DEVENNEY, Harrisburg: The dosing of children with "patent medicines," laudanum, and all sorts of anodynes, has much to do with the condition of the eyes. In a case under my observation it was thought when the children started to school that there was a brain condition which prevented them from learning. Correction of the eye defects removed the difficulty.

DR. BROOKS, Wilkes-Barre: We should instruct our house of delegates to confer with the lawmakers on school hygiene, letting it be known that we are desirous of having medical inspection in the cities of Pennsylvania.

Oration on State Medicine: Control of Disease

DR. ARTHUR B. MOULTON, Camp Hill: Frequently the cause of disease is almost within one's grasp and yet the significance of the facts may pass for centuries unnoticed. The idea of segregation is mentioned in the books of Moses. It is presumed that smallpox existed in China more than a thousand years before the Christian era, and scarlet fever nearly 500 years before. No quarantine restrictions were established in England until 1348. The first attempt at the centralization of health authority was made at Venice in 1495. During the first two centuries after this country was discovered no health laws were passed. Probably the first restrictive measures adopted by any central health authority on the American continent was the order issued by court in Massachusetts during 1647. In 1700, a quarantine law was passed in Massachusetts and also in Pennsylvania. All regulations enforced for the control of communicable diseases during the past can be classed under three heads: (1) that which has to do with commercial interests as prompted by the commercial spirit alone; (2) class legislation to protect the rich and cultured from the diseases of the poor, which is purely selfish; (3) the one on which we have entered at the present time for the protection of the people at large.

(To be continued)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty-Second Annual Meeting, held at Fort Wayne, Ind., Sept. 21-23, 1909

(Concluded from page 1220)

Four Hundred and Forty Operations on the Appendix

DR. EDWARD J. ILL, Newark, N. J.: I deplore the late diagnosis and the too-frequent use of the hypodermic syringe, but for these the general results would be much better. Of the 440 patients operated on, 40 per cent. were males and 60 per cent. females. In 81 women the appendix was removed incidentally, while other surgical conditions prevailed and many were shown to be normal by the pathologist. I deplore the frequency with which the appendix is removed, simply because the abdomen is opened, and believe that no operation should be done except for the express purpose of removing symptoms of disease for which the patient seeks advice. Any prolongation of the operation may add to the patient's danger and certainly to his discomfort during convalescence. The youngest person operated on was 5 years old, and the oldest was 65 years. In 43 per cent. of the cases there was suppuration. Among the 189 septic cases there was localized abscess in 109, and diffuse suppurative peritonitis in 70. What seems to be a general peritonitis is recorded in 8 cases, and 2 patients had septicemia. The total number of deaths was 32, or 7.2 per cent. Increased experience shows a marked reduction in the death rate. Thus, in the first 100, it was 18 per cent.; the second 100, it was 6 per cent; in the third 100, it was 5 per cent., and in the fourth 100, it was 3 per cent. The total number of deaths in the non-suppurating cases was 2, to 0.8 per cent. The percentage of deaths in the suppurating cases was 14.3 per cent. Late and hopeless cases accounted for this high death rate. An interesting fact in the death rate was the personal one in the after-treatment. Thus, in 198 patients who were looked after personally by me, the death rate was 3.6 per cent., while in 185 patients looked after by the attending physician, the death rate was 10.3 per cent., or nearly three times as great. The death rate in the cases of diffuse suppurative peritonitis was 10 per cent. I have collected from various hospital reports throughout the country 7,833 reports of operations for appendicitis. The death rate in the non-suppurating cases was 3.7 per cent., while the suppurating cases showed a death rate of 26 per cent. I am never obliged to reopen the abdomen for late symptoms or adhesions. I advise the removal of the appendix in all cases if it can be done in a reasonable time, depending on the conditions of the patient. I urge the use of absorbable suture material in all septic cases. I have used most of the technics recommended for the removal of the appendix, but have always returned to the cautery above the ligature and the purse-string suture. I insist that much mischief has been done by not draining septic cases. In these cases I have adopted the right lateral semiprone posture, in such a way that the opening in the abdomen is in the most dependent part of the peritoneal cavity. The drain can be brought out through the upper end of the incision, thus reducing to a minimum the danger of hernia, of which I have seen less than 1 per cent. in my cases, and this also does away with the stab incision in the loin. The position is kept up for twenty-four hours.

A New Point in Diagnosis Between Appendicitis and Tubal Diseases

DR. ROBERT T. MORRIS, New York: Hypersensitiveness at the site of the right group of lumbar ganglia indicates that the appendix alone is the center of irritation. Hypersensitiveness of both right and left groups of lumbar ganglia indicates that some pelvic structure is the center of irritation. In cases in which there is a question if the appendix or some pelvic structure is causing local or reflex disturbance, we can commonly make a differential diagnosis at once by making deep pressure over the sites of both groups of lumbar ganglia, and noting whether these groups, or only the right group, are sensitive to an important degree.

Is the Routine Administration of the Preoperative Purge Defensible?

DR. EDWIN WALKER, Evansville, Ind.: Purgatives can do harm and should be given only when the indications are clear. The profession should abandon the slipshod routine methods now in vogue, and should teach the laity, both by precept and example, the evils of the purgative habit. The practice of purging all patients before surgical operations is unnecessary and injurious; they are made more uncomfortable, are weakened, and the condition of the intestinal canal is not rendered more favorable, but, on the contrary, germ activity is stimulated, just as it is in enteritis, thus increasing the probability of infection when the gut is opened, and there is in addition to this more postoperative tympany. A diet of digestible food for twenty-four hours or more and a fast of eight or twelve hours before operation will put the intestine in the best possible condition for any operation, especially on the intestinal canal, except when obstructive lesions exist, and for these purgatives are worse than useless and other measures are required. In a few cases of milder fecal stasis a purgative several days before operation, followed by enemas, is of service. These cases, however, are extremely rare. The routine use of any powerful drug is to be deplored, and the habitual, preoperative purge is indefensible. The continuance of this practice indicates mental stasis of the surgical mind.

Cesarean Section, Abdominal and Vaginal, Compared and Contrasted

DR. MILES F. PORTER, Fort Wayne, Ind.: (1) With a living and viable child the abdominal is the operation of choice. (2) The vaginal operation is probably never indicated in placenta prævia. (3) In cases demanding quick delivery in which the only obstacle is an undiluted os, the vaginal operation should be done. (4) Infection should not decide us in favor of either operation, but the fact that its existence adds to the mortality of both should admonish us that neither is to be regarded an operation of *dernier ressort*. (5) With a dead or dying mother, and a living, viable child, the abdominal operation should be done. (6) Better knowledge of the indications for these operations and a timely resort to them will materially reduce both the maternal and fetal mortality and morbidity. Too little attention is paid to the life of the unborn child and too little to the morbidity of both child and mother. Obstetric procedures should be conducted with a view to perfect the recovery of the mother and the normal development of the child. The term, vaginal Cesarean section, is a misnomer. Owing to the contracted and badly lighted field, obscuration of the field by blood, difficulty of attaining and maintaining perfect asepsis and difficulty of delivering the child, the vaginal operation is the more difficult. The only obstacle to delivery which is removed by the vaginal operation is the cervix. The placenta is avoided by the vaginal operation except in cases of placenta prævia. The wound is nearer the ideal after the abdominal operation. There is greater likelihood of infection after the vaginal operation, but if infection occurs the danger would be greater after the abdominal operation. Patients are more likely to object to the abdominal operation. Previous infection increases the danger of both operations. Remote dangers, such as rupture of the uterus, are about equal and very slight in both operations. Abdominal operation offers the child the best chance, the maternal mortality is about 1.58 per cent. that of the vaginal varies from 0 to 6.5 per cent. The maternal morbidity is less after the abdominal operation.

Methods of Drainage in Abdominal and Pelvic Surgery

DR. JAMES F. BALDWIN, Columbus, Ohio: In this paper I urge the more frequent resort to vaginal drainage in pelvic cases, in which pus is present, or extensive adhesions, and drainage through a stab incision in certain cases of appendicitis. I advise the use of gauze, not so much for real drainage as to keep the intestines from contact with raw or infected surfaces. The use of the word "fluffage" would be more appropriate than "drainage" in these cases for the purposes intended. The gauze is passed through an incision in the vaginal vault from above down, the opening in the vault being of ample size, and the gauze being then so placed as lightly to fill the pelvis. In this way the gauze keeps the intestines out of the pelvis and at the same time absorbs all discharges. The gauze is left in place one week and then withdrawn. Sterile douches are then used until the cavity thus left becomes obliterated. I have used this method for many years, and in a large number of cases, with satisfactory results, both immediate and remote.

How Can We Best Educate Women to Seek Relief Early from Carcinoma of the Uterus?

DR. C. C. FREDERICK, Buffalo, N. Y.: The statistics of operations done for carcinoma of the uterus are much better from German clinics than in this country, not because Germany has more skilful operators but because the women are operated on earlier, having been taught to consult the surgeon early when they have symptoms of malignant disease of the uterus. I think there is a belief among general practitioners in this country that hysterectomy for carcinoma of the uterus is an unsuccessful operation, in so far as it prevents recurrence. Such has been the case and will continue to be so long as women so suffering are not operated on earlier than they have been in the past. Early radical operations give good results, and they ought progressively to give better and better results. Hysterectomy for carcinoma of the body of the uterus gives notably better results even in late cases than when the cervix is involved. Women should not only be taught that early operation gives better results, but also that the severity of the operation and the mortality and the morbidity are decreased thereby.

Phlegmasia Alba Dolens

DR. WILLIAM A. B. SELLMAN, Baltimore, reported a case of this nature in connection with an ovarian tumor. He presented photographs showing the size of the tumor, the amount of abdominal distention, and the swollen limb. He considers that the phlegmasia alba dolens in this case was due to pressure on the iliac vessels on the left side, and that this pressure was immediately relieved with removal of the tumor. The patient was fortunate in the rapid restoration of the circulation and in not having had a clot form, which might have destroyed life by the entire clot, or a portion passing to the heart.

Removal of Upper Portion of Rectum and Sigmoid

DR. THOMAS B. NOBLE, Indianapolis, related the case of a married woman, thirty-three years of age, in whom he extirpated the upper portion of the rectum and sigmoid for cancer. In connection with this case he showed an instrument which will be helpful in this class of cases. It is the result of a study and use of Murphy's button. It has some advantages, he asserted, over the button in this class of work, in that it can be introduced more quickly; it serves as a splint to the soft parts; admits of irrigation of the colon, and the prevention of impaction, and by continuous drainage keeps the bowel quiet, thereby favoring prompt and perfect union. He believes that it is a useful means to the ideal end, namely, an intact abdomen, intact intestine, and competent anal sphincters.

Malignant Tumor of Undescended Testicle

DR. O. G. PFAFF, Indianapolis: The patient was a man of 38. Examination disclosed a tumor the size of a fetal head, occupying the left lower abdomen and pelvis. The tumor was

freely movable within moderate limits, but was apparently attached by a pedicle to a point near the internal inguinal ring. The mass was diagnosed as a malignant tumor of the undescended left testicle, and three days later the man submitted to operation. Through an incision made to the left of the median line, the relationships of the mass were easily made out. The pedicle was attached at the internal ring, and there were some recent adhesions to the bladder, which were easily broken up, the pedicle ligated, and the mass removed. The man made an uneventful recovery from the operation, but within five months died of malignant disease. I did not see him after he left the hospital, and did not learn the location of the later growth, other than that it seemed to affect both the bladder and the bowels. The microscopic examination of the growth showed it to be a large round-celled sarcoma.

Terminal Events in Gall-Stone Disease

DR. CHARLES N. SMITH, Toledo, Ohio: That gall-stone disease is extremely prevalent, afflicting from 7 to 10 per cent. of adults dying in the public hospitals of England, Germany and America, is a contention apparently substantiated by the records of thousands of post-mortem examinations. Rupture of the suppurating gall-bladder into the general peritoneal cavity is by no means an unusual terminal event, having occurred five times in my own experience. Of these five patients, four made a complete recovery after operation, while in the remaining case, a desperate and delayed one, with widespread peritonitis, the patient died on the table as the abdominal incision was completed. From observation of these and other cases, and from a study of the literature, I am convinced that the frequency with which rupture of the gall-bladder occurs as a terminal event in gall-stone disease is scarcely appreciated. These cases are commonly diagnosed as peritoneal infection from appendicitis, operation done on this diagnosis and the case so recorded unless gall-stones, correcting the diagnosis, are found in the peritoneal cavity. One of my patients, a few months before coming to me, had been operated on for a supposed appendicitis and the appendix removed. When a gauze drain was being removed, following the operation, a gall-stone escaped from the cavity and others were expelled at subsequent intervals. Pus was discharging from the incision when the patient consulted me, and several gall-stones were removed from the sinus by the scoop. The gall-bladder, containing one immense stone, and a number of small ones, was removed and recovery followed. Two other patients were brought for operation with a diagnosis of appendicitis, because of pain, tenderness, and swelling in the right half of the abdomen. Correction of the diagnosis prior to operation was not difficult. Free incision, removal of gall-stones, cleansing of the cavity, abundant drainage, with the patient in the Fowler position, were followed by slow but eventful recovery. Of the many terminal events of gall-stone disease, malignancy is without question the most hopeless from the standpoint of cure. That primary malignant disease of the gall-bladder and ducts is preceded by gall-stones in practically every instance, is the experience of surgeons and pathologists. It would seem that a due appreciation of the frequent occurrence and the serious import of these complications must lead to the surgical removal of gall-stones as a conservative and prophylactic measure, long before the opportunity is given for the onset of these terminal events. That this may be done will require a more general recognition of the initial symptoms of gall-stone disease, with diagnosis based thereon, rather than on the symptoms produced by these same terminal events.

DISCUSSION

DR. MILES F. PORTER, Fort Wayne, Ind.: I wish to emphasize the author's statements regarding the relative frequency of the terminal events of gall-stone disease and the consequent importance of operating on patients with gall-stones before these more serious end-results occur. I was interested in Dr. Smith's remarks on posterior gastroenterostomy in cases in which the pylorus is obstructed because of adhesions about it, or the gut below, or because, on the other hand, of adhesions that are hard to break up which hang the pyloric orifice up under the liver. This has occurred a number of times. and in some of the cases the separation of the adhesions has not only been difficult, but accompanied by considerable trauma of the liver, and it is not unattended by danger. In many cases after these adhesions have been liberated there is a still greater difficulty to overcome, namely, their reposition as they were before, and I am therefore impressed with the fact that many of these can be better treated by posterior gastroenterostomy, in so far as the relief of this feature is concerned. I rarely do a cholecystectomy; it seems to me that the gall-bladder should be preserved as long as it is functionating and communicates with the liver.

DR. THOMAS B. NOBLE, Indianapolis: I wish to refer to that condition in which by pericholecystitis we have changes occurring in the stomach due to engorgement by the inflammatory exudate on the pyloric area. In such conditions we will have gastric neuroses, as well as true anatomic disturbances following. Dr. Smith has advised gastroenterostomy in such conditions. I prefer the Finney operation. I do not favor establishing an artificial opening between the intestine and stomach unless every other procedure fails; but the Finney operation maintains the normal route, makes drainage free and perfect, and in the five cases in which I have practiced it I have had satisfactory results.

Phases of Puerperal Sepsis

DR. HUGO O. PANTZER, Indianapolis: The morbidity and mortality attending obstetrics in private homes as contrasted with the results obtained where confinements have occurred in hospitals, should be a convincing argument in favor of the latter practice. The dislike of midwifery by medical men who seek to limit their practice to a specialty, and the displeasure with which the general practitioner attends obstetric cases have deprived this branch of medicine of the growth and efficiency characterizing other branches of medicine. The acme of the present hospital movements will not have been reached until each community has ample hospital provision for its maternity cases. With the public won over to this innovation, it may be hoped that the old-time natural and happy union of obstetrics and gynecology in one specialty, as still generally maintained in old countries, may again become established with us. Without a specialist in obstetrics in most fields, the practitioner in time of need is driven to accept the service of a man no more skilled than himself. The gynecologist, who avowedly has discarded obstetrics, reasonably enough is called on in these emergencies in few cases and then often too late to give effective succor. This unfortunate situation demands relief. Review of recent literature shows that fuller recognition is taken of the differential pathology of parturient patients, and that skepticism of therapy, at times bordering on nihilism, is the dominant note. The routine treatment of various measures, such as curettement, antiseptic douches, etc., is receiving equally wholesale condemnation by some writers. Interesting statistics show conclusively that a let-alone policy is far superior to the indiscriminate medical and surgical practices of a recent past. Serology is not yet of much practical use, and surgery is indicated in comparatively few cases.

Other Papers Read

"Operative Enlargement of the Pelvis of the Non-Pregnant Woman," by Dr. John N. Bell, Detroit; "Artificial Anus Following Operation for Intussusception," by Dr. John Young Brown, St. Louis; "Gilliam Operation for Retrodisplacements of the Uterus," by Dr. W. H. Humiston, Cleveland.

SIXTEENTH INTERNATIONAL MEDICAL CONGRESS

Held at Budapest, Hungary, Aug. 29—Sept. 4, 1909

(Concluded from page 1228)

Total Extirpation of the Bladder

PROFESSOR VERHOOGEN and DR. DE GRAEUWE, Brussels, Belgium: Total cystectomy has been followed by a death rate of 31 in 59 cases collected from literature—i.e., a mortality percentage of 53.4. This serious result of surgical intervention does not depend directly on the removal of the bladder. for it is a simple operation. The danger results from the difficulty of ensuing the free escape of the urine coming from the kidneys and of preventing their infection. It is still more dif-

ficult because the ureters are generally already distended and the kidneys affected before operation. The methods which have given the most serious results are those in which the ureters have opened on to the skin (30 per cent.) or left free in the wound (13 per cent.). When one or both of the ureters have been carried into the bowel the death rate becomes formidable (66 per cent.), even when precautions have been taken to have a valve at the ureteral orifice, or to exclude the portion of bowel into which the ureters open. The advantages of the two methods can be combined by performing first a double nephrostomy and then a cystectomy with ureterostomy into the excluded cecum. If the ureterostomy works well, the renal fistulas may be allowed to close. Total cystectomy is indicated: (1) malignant tumors of the neck of the bladder or in the neighborhood of the ureteral openings; (2) malignant tumors elsewhere in the bladder too extensive for a partial operation; (3) recurrent malignant growths; (4) papillomata too numerous to be removed in any other way; and (5) involvement of the bladder to a great extent by neighboring malignant growth.

Results of the Treatment of Exstrophy of the Bladder

DR. E. ESTER, Montpellier, France: Among the harmful results caused by exstrophy of the bladder, three are of especial importance; they are incontinence of urine due to the absence of a sphincter, pain, and suppuration resulting from chronic inflammation of the mucous membrane of the bladder exposed as it is to many irritating and infective causes. The best treatment is that which deals with these especially: (1) None of the methods employed gives an entirely satisfactory result; (2) the methods which aim at a plastic restoration of the bladder or the suture of its edges should be abandoned because they do not cure the incontinence of urine; (3) among the many methods of derivation of the course of the urine there are two which give good results, and which prevent incontinence, these are Maydl's method and Soubbotine's method; and (4) the cases reported are not sufficiently numerous to enable a decided opinion to be given as to which is the better. Nevertheless, the following opinions may be expressed: (1) Soubbotine's method protects more thoroughly against ascending infection than does Maydl's method; (2) from the point of view of technic Soubbotine's method, because of its complexity and the length of the treatment is inferior to Maydl's method; and (3) to appreciate the results obtained by these two methods it is necessary to follow up the cases for a number of years, for it might happen that the anal sphincter might be sufficient to retain the urine at first, but later it might allow a certain amount of incontinence.

The Affections of the Urinary Tract by Colon Bacilli

DR. THORKILD ROVSING, Copenhagen: In most cases the *Bacillus coli* reaches the urinary organs by way of the bloodstream, and the bacilli give rise to a diffuse nephritis, generally slight but occasionally acute. Often the nephritis gets well rapidly and only a bacteria remains. Frequently the bacilli are introduced into the urinary passages by instruments, or they may wander in owing to a paralysis of the sphincter, but this can never occur if the sphincter is efficient. Occasionally infection occurs from the spreading of inflammation from neighboring organs. Since 1897, I have treated 285 cases of *Bacillus coli* infection of the urinary passages. In 180, the disease arose as an acute nephritis or pyelitis in patients who had never been catheterized. Some of the starting points were tonsillitis, cholecystitis, acute enteritis, appendicitis, colitis, cancer of the colon, and typhoid. Clinically, the hematogenous nephritis frequently commenced with febrile symptoms and hematuria. The blood soon disappears from the urine but albuminuria remained, often with pus and casts. Many miliary abscesses may be present in the kidney, and microscopically there can be seen minute centers of inflammation caused by bacillary emboli. Pyelitis and pyelonephritis may be temporary or chronic; when chronic they are chiefly associated with calculous pyelitis. Cystitis is the rarest manifestation of infection by the colon bacillus, for it does not possess the power of attaching the intact mucous membrane of the bladder. In treatment operative interference is never necessary in uncomplicated infection by the *Bacillus coli*, but if complications are present which hinder recovery operation may be necessary; for instance, if calculi and stricture of the ureter are present. The rational treatment of uncomplicated *Bacillus coli* infection is by flushing out the urinary passages by a free stream of fluid. This can be done by leaving a catheter in the bladder and giving the patient three or four liters of distilled water to drink in the 24 hours. Salol, 1 grain three times a day, is useful. When the urine has become free from bacteria 20 c.c. of a 1 per cent. solution of nitrate of silver are injected into the bladder and the catheter is withdrawn. There is no object in washing out the renal pelvis through a ureteral catheter.

Indications for the Operative Treatment of Secondary Suppurative Labyrinthitis and Method of Treatment

DR. E. SCHMIEGELOW, Cophenhagen: The paper is based on the observed results of 42 cases of labyrinthitis following purulent conditions of the middle ear. In ten cases the labyrinthitis was either of the partial circumscribed or else of the serous type, and the patients all recovered after opening and emptying the cavity of the middle ear. The remaining 32 cases consisted of diffuse purulent conditions of the labyrinth with complete deafness. An operation on the labyrinth itself was not indicated in all the cases of secondary lesions of the labyrinth; the indications for this operation were not derived solely from the results of functional exploration, but also from the progress of the illness and the direct examination of the wall of the labyrinth after the radical operation. The treatment of secondary labyrinthitis consisted sometimes in efficient prophylaxis and sometimes on making an opening into the cavity of the labyrinth. The labyrinth may be opened in various ways. The method recommended by Jansen and Neumann ought not to be the principal one. This operation is deep and difficult, and is only justifiable when there is reason to suppose that in addition to the disease of the labyrinth there is suppuration in the posterior cranial fossa. The labyrinth may be opened with a drill (*fraise*), but the chisel and hammer are safer and enable the direction to be judged better. The method suggested by Uffenorde avoids accidental injuries to the facial nerve, which is exposed by carefully opening the aqueduct of Fallopius, and after this the semicircular canal, the vestibule, and the cochlea are opened. In this manner the facial nerve can be preserved during the complete removal of the labyrinth. At the end of the operation the nerve can be seen descending freely through the cavity which is left. In 22 of the 32 cases of purulent diffuse labyrinthitis the treatment consisted only in performing the radical operation on the middle ear. Of these 22 patients 2 died from complications existing previously to the operation. Of the remaining 20 patients 2 died, while 13 (i.e., 65 per cent.) recovered.

Infantile Types of the Temporal Bone and Their Surgical Importance

MR. ARTHUR H. CHEATLE, London, Eng.: By infantile type is meant the persistence in an exaggerated degree throughout life of the anatomic conditions of the outer wall of the antrum and mastoid mass as seen in infancy. In the adult the mastoid mass is generally diploetic but very rarely dense; the outer wall of the antrum is always dense and thick and lined internally by the cells which form before birth ("fetal cells"), and a layer of dense bone separates the cavity of the antrum from the mastoid mass. The types are found in about 20 per cent. of normal bones. The lateral sinus is usually forward. The density of the outer antral wall so frequently found in chronic suppuration in the antrum is a factor in producing chronic suppuration and is not an osteosclerosis.

Nasal Asthma

DR. M. GROSSMANN, Vienna: Experimental researches undertaken in the hope of explaining the phenomena of nasal asthma have shown that electrical or mechanical irritation of the nasal mucous membrane leads to a notable disturbance of the cardiac function, followed by a considerable engorgement of blood in the pulmonary circulation and by an increase in the external dimensions of the lung. In curarized animals this increased volume of the lung causes a rise of pressure in the intrathoracic space and a depression of the diaphragm. This

effect of nasal irritation is absent if either the second branch of the trigeminus nerve or the two vagus nerves are previously divided. There is, therefore, reflex action in a curved path the centripetal portion of which is formed by the vagus. This enlargement of the lung is not caused exclusively by the accumulation of blood, but also by the fact that the pulmonary capacity—i.e., the available pulmonary area—is increased in direct proportion to the engorgement with blood. The lung becomes larger not only as regards its external dimensions, but also as regards its intrapulmonary capacity. In accordance, herewith, the intrapulmonary pressure, unlike the pressure in the intrathoracic space, falls when the pulmonary circulation is engorged with blood. This enlargement of the lung is accompanied by rigidity which seriously interferes with respiration.

Treatment of Chronic Glaucoma

DR. FELIX LAGRANGE, Bordeaux, France, reviewed all the means, medical, surgical, and operative, which have been employed in the treatment of glaucoma, and laid particular stress on operations designed for lessening ocular tension. He dealt with iridectomy and sclerotomy as well as section of the sympathetic, and gave it as his opinion that all the intraocular operations only succeeded imperfectly in attaining the object of the perfect operation—namely, a fistulous or filtration cicatrix by which evacuation can be effected when the tension is too high. He described his operation for this end in precise terms. It consists essentially in a sclerectomy made at the level of the canal of Schlemm, and comprising all the thickness of the sclerotic. The incision should be made in such a way as to cut the insertion of the ciliary muscle, by which means the choroidal space will be brought into communication with the anterior chamber. The section of the sclerotic opens a free passage for the intraocular fluids, which can thus drain out under the conjunctiva. Dr. Lagrange added that in eyes with permanently increased tension sclerotomy should be followed by an iridectomy in order to avoid the inclusion of the iris. In cases of simple chronic glaucoma in which the increase in tension is intermittent or very slight, simple sclerotomy should suffice to produce an effective filtration cicatrix.

Postoperative Inflammations of the Eye Caused or Prompted by Autoinfection

DR. ANGELUCCI, Naples: It is an axiom of the present time that autointoxication and autoinfection are able to initiate inflammatory processes in the eye. Morbid conditions, often obscure and sometimes inappreciable to the patient, may cause postoperative inflammation in the eye. 1. Diseases of metabolism—(a) Albuminuria: Sclerosis of the renal vessels in old people and the arthritic kidney, accompanied by a slight excretion of albumin, have no deleterious effect on the postoperative course in cataract extraction. In Bright's disease iritis occurs almost always, sometimes after simple iridectomy, especially if the disease is advanced. (b) Diabetes: Cataract extraction may be free from inflammatory complications and consecutive hemorrhage in diabetics of good constitution. In the late dystrophic stages, usually associated with albuminuria, even if the sugar excreted in the urine shows diminution in quantity untoward results are to be anticipated. (c) Gout: This disease affords no contraindication to cataract extraction. Gouty attacks occurring during the period of convalescence do not appear to exercise any malign influence. When gout is accompanied by constipation or other disturbances of the intestinal tract there is not the same immunity from inflammation. 2. Diseases of the mouth.—In these cases iritis is common after extraction of cataract and may eventuate in suppuration. 3. Affections of the gastrointestinal tract.—Constipation and disorders of digestion are a potent cause of postoperative iritis. It occurs from the fourth to the eighth day and is ushered in by increased conjunctival secretion, often affecting both eyes. 4. Diseases of the bladder.—Two cases of iritis in iridectomy were associated with chronic vesical catarrh in spite of minute precautionary measures. Extraction of cataract has been followed by hyperemia of the iris although serotherapy was employed. 5. Influenza.—A case of cataract extraction during an attack of influenza resulted in the loss of eye from panophthalmitis. 6. Furunculosis and abscesses.—Hypopyon ulcer supervened on an iridectomy in a patient with boils, and the eye was lost from panophthalmitis in an old man who had an abscess and was operated on for cataract.

Prevention of Infection in Operations on the Eyeball

DR. ELSCHNIG, Prague, Bohemia: Investigations have led to the conclusion that in spite of careful antiseptic or aseptic precautions postoperative infection originates exclusively in the conjunctival sac, with the sole exception of rare endogenous infections. In all cases, therefore, in which the globe is to be opened the bacteria of the conjunctival sac should be examined and operation undertaken only if pathogenic organisms, especially streptococci and pneumococci, are absent. The most reliable methods are by culture experiments on both solid and fluid media, such as serum bouillon and serum agar plates. The use of pyocyanase and perhaps mercury oxycyanate is most to be recommended for the elimination of pathogenic organisms. Immunization procedures and even disinfection of the field of operation have little or no value, but general infection and disease of other organs must be treated. When infection of the conjunctival sac is suspected, the greatest care must be exercised as to the exact mode of operative procedure. All wounds should be situated in the conjunctival area, and wounds of the sclerotic with scissors—e.g., subconjunctival cataract extraction—should be avoided.

Eye Symptoms in Disease of the Pituitary Body and Acromegaly

DR. W. UHTHOFF, Breslau, Prussia: Cases of hypophyseal tumors with and without acromegaly were distinguished for purposes of differential diagnosis. The results given are founded on 328 necropsies. Temporal hemianopia is the most constant symptom; typical choked disc and slight papillitis each occurred in about 5 per cent. of the cases, simple atrophic pallor of the discs in 20 per cent. and central scotoma only in occasional cases. Paralysis of ocular muscles, generally affecting the oculomotor nerve, occurred in 10 per cent. of cases, and nystagmus in 6 per cent.

Sanitary and Hygienic Organization of Armies, with Especial Relation to the Spanish Army

DR. LARRA Y. CEREZO, Madrid, Spain: Each division of the Spanish army will take into the field a complete hospital with every necessary appliance for 200 beds, distributed among 16 tented-wagons. As a complement to this hospital installation the division is further equipped with 4 wagons, each containing surgical and medical appliances, each with 300 dressings, and the pharmaceutical necessities and material for clinical investigation in the hospital; 4 wagons of appliances, a food-supply wagon, which provides food for the hospital of 200 cases for six days; and 24 ambulance wagons. These units correspond to the divisional field ambulance and the divisional hospital. The latter has also at its disposal a disinfecting stove, bath, apparatus for sterilization by heat and by ozone, a reservoir wagon of water with a filter, and another for chemical and bacteriologic analysis and for radiographic investigation. In the regiments the material for sanitary service include the following sealed patterns: (1) A first field dressing for each man; (2) an emergency knapsack for each company; (3) a medical saddle-bag or wallet, for each squadron or battery; (4) a medical haversack; (5) a medical chest per battalion; (6) a reserve chest for each battalion; (7) a medical vehicle for each battalion; (8) a case of surgical instruments (9) a case of amputation instruments for mounted corps; (10) a service stretcher; (11) a Swedish chair; (12) an ordinary litter. Each army corps has a hospital train. Spain has three large establishments to provide the raw material, and sealed patterns of material, including vaccines, prophylactic and therapeutic serums, drugs, etc. These establishments are: The Military Health Park, the Central Medical Laboratory, and the Institute of Military Hygiene. All the sanitary units assigned to each division in time of war are calculated to provide the division with about 46,000 to 49,000 dressings—that is, 3 per head, 1 first field dressing, and 2 for secondary treatment.

Intestinal Parasites in the Tropics

DR. DEBAYLE, Nicaragua, dwelt on the extreme frequency of diseases due to such parasites in tropical countries, particularly the ankylostoma, the *Ascaris lumbricoides*, the *Trichocephalus dispar* (the serious effects of which are often not sufficiently recognized), and the various forms of tenia. The symptoms are protean in their character, they result from a severe toxemia; the hemolytic effect of the toxins was specially dwelt on. There is the real need for energetic measures in destroying these parasites; the people must be educated, an active propaganda is essential.

Epidemics of Dysentery in the Mussulman Pilgrimage

DR. ARMAUD RUFFER, president of the Maritime, Sanitary, and Quarantine Board of Alexandria: At the Egyptian lazaret of El Tor from 400 to 600 individuals with dysentery are treated each year among the returning pilgrims, and of these some 150 die. As the pilgrims at El Tor represent only a portion of the whole number, it is evident that the deaths from dysentery during these pilgrimages must be enormous—perhaps from 3,000 to 15,000 per annum. It is unfortunate that the same attention has not been paid to this disease by the European powers as to plague, or cholera, or yellow fever; the international sanitary conventions deal only with the latter diseases. There are two main forms of dysentery, the amebic and the bacillary, and not infrequently a mixed infection is encountered. From observations made at El Tor conjointly with Dr. Zirolia, it was found that the majority of the patients gave no serum reaction with the Shiga-Kruse bacillus; in fact, only 2 per cent. of the whole gave such reaction. In some of the cases the Flexner organism was present, in others the pseudodysenteric bacilli, A and D, of Kruse, were found. Each of these organisms was absolutely distinct, and gave reaction specific to itself but not to the others. In a number of patients another bacillus was found, to which the name of the Tor bacillus, No. 1, has been provisionally given. All these organisms presented the general characteristics of the pseudodysenteric bacillus D of Kruse, but their serum reaction was entirely different; they agglutinated neither that nor any other of the above-named bacilli. Briefly, the forms of dysentery encountered in the pilgrims are due to at least nine different micro-organisms, and at least six bacilli are more or less clearly and distinctly differentiated. In cases due to the Shiga-Kruse bacillus most excellent results have been obtained by serotherapy; indeed, in few other diseases are the results of serotherapy so brilliant. In the Tor cases there was practically no effect, which is further evidence that they are due to some other micro-organism.

Yellow Fever Prophylaxis in Cuba

PROFESSOR AGRAMONTE, Havana: The topography and geographical position of Cuba and its large, non-immune population render it, if not less liable to invasion by the disease, at least more favorable to its extinction than some other regions. In 1901 the infection completely disappeared, as the result of a campaign based on the doctrine of mosquito transmission, and carried out by Colonel Gorgas. Between February, 1901, and October, 1905, only a few cases of the disease, imported from Mexico or South America, occurred and none of these gave rise to secondary cases. In May, 1902, the republic was inaugurated; the flow of immigration, especially from Spain, increased twofold, and the new railroad brought one end of the island into rapid communication with the other. New towns were established and trade and industrial enterprise increased proportionally. Three unfavorable results followed: An unwarranted sense of security was brought about, the non-immune population was increased, and the *stegomyia* mosquito was spread from the coast to the interior, where it did not exist before. Consequently, the yellow fever epidemic of New Orleans in 1905 crept into Cuba in October of that year, and from that time till Dec. 24, 1908, 405 cases of the disease developed in the island. None has occurred since. The measures employed to deal with this outbreak were indirect and direct. Quarantine appears to be of small value in the prevention of yellow fever, if the certificates of immunity presented by passengers be relied on. In 1905 close quarantine was in force against the southern states of America, and yet the infection, which was waning in New Orleans, entered the island. An absolutely closed quarantine might be effective, but it would cause great inconvenience to commerce and to travelers. The isolated and complete defense against mosquitoes of all imported cases, on the other hand, are effective, as shown by the occurrence of more than 30 imported cases from Mexico and the United States, without any secondary cases developing. The patients were all isolated in the Las Animas Hospital, where the most minute precautions are taken to prevent the spread of infection by mosquitoes. Every hospital in the island is provided with yellow fever wards. A system of registration of non-immunes has also been most useful. Some 60,000 men are registered as members of various five specially equipped hospitals. These 60,000 men are under Spanish clubs or societies in Havana; and for these there are special sanitary control, and any suspicious illness among them is at once dealt with. As the total number of white foreigners in Havana is 74,000, it will be seen how valuable a measure this is. Similar societies exist in other towns. Spanish immigrants rarely fail to inscribe their names with one or other society. A large staff of sanitary commissioners has been formed, and these investigate any suspicious case in any part of the island. Among the direct measures in the control of yellow fever one of the most important has been a house-to-house inspection carried out by trained men every ten days. The removal of breeding-places for mosquitoes, the oiling of pools and other collections of water and the provision of metallic gauze coverings to water-tanks and barrels, have been extensively carried out. Another useful measure has been the free distribution of fish to be put into such barrels and tanks in order to destroy the larvæ. Fresh supplies of fish are furnished as required. The destruction of mosquitoes by fumigation or other means is also extensively applied.

Etiology and Prophylaxis of Bacterial Dysentery

DR. GALLI-VALERIO, Lausanne, Switzerland: The disease is caused not by one bacillus but by many bacilli belonging to the Shiga group of such organisms. The terms paradysentery and pseudodysentery should not be used, as they tend to cause neglect of measures of prophylaxis. The disease is spread mainly: (1) by personal contagion either from sick persons or from healthy "carriers" of the bacilli, and either directly or through fomites; (2) by water, which plays a most important rôle in the spread of the disease; (3) by means of flies, as proved by experiments; (4) by milk, which may be infected by flies or by the addition of infected water, or the washing of vessels with such water; (5) by vegetables, for similar reasons; (6) by the soil and dust. The main prophylactic measures recommended are grouped under the following headings: (1) as rapid as possible a diagnosis of the first cases; (2) compulsory notification of all cases; (3) strict isolation of the sick; (4) disinfection of the excreta, of linen and other fomites, and of the room occupied by the sick. Immediate and compulsory notification, at present in force in few countries, is an absolute necessity. Thorough sanitation is also, of course, of prime necessity; and finally, the public must be actively educated in the need of strict measures. Vaccination has hitherto given uncertain results.

Pathology of Secretion and Motility of the Intestinal Canal

DR. A. BICKEL, Berlin: Disturbances of the glandular activity in the intestine can be either quantitative or qualitative in their effects, the former depending on alterations in the production of the secretions, and the latter on their composition. The disturbances may therefore be distinguished respectively as parenchymatous or neurogenous. In the first named the morbid process affects the gland cells or the surrounding tissues; in the second form the nervous mechanism of the gastro-intestinal tract is the seat of the disturbance. Further, the alterations in the secretion of mucous must be distinguished from that of the secretion of the digestive juices. With regard to the former an excessive secretion only is of importance; this is due to some fault in the parenchyma; the nervous supply may also have an influence through a less powerful one.

Medicolegal

Power of School Boards to Enact and Enforce Rules to Prevent Appearance of Smallpox in Schools and Especially Requiring External Vaccination

The Supreme Court of Missouri says, in the case of State, on the relation of O'Bannon vs. Cole and others constituting the School Board of Sedalia (119 S. W. R. 424) that the board, on Dec. 4, 1908, made an order that it had come to the knowledge of the board that smallpox existed within the school district, the board deemed it necessary that all children attending school, who had not been vaccinated, must be vaccinated within 30 days. On Jan. 8, 1909, the board adopted the following additional resolution: The board will not accept a certificate of vaccination unless the physician does state that the child has been vaccinated with vaccine virus, and all children who have had smallpox must bring a certificate from the physician in attendance to that effect; and, where such certificate can not be procured, then the parent or guardian must make affidavit that such child has had the smallpox, etc. The records of the board showed a called meeting held on January 12 for the purpose of taking further action on the question of vaccination, the president stating that he had been informed that certain physicians had been vaccinating school children by giving powders internally and giving them certificates that they had been vaccinated internally with vaccine virus. A physician present asked to be heard on the subject and stated that such treatment would render the patient immune from smallpox. A resolution was then passed: That no certificate of vaccination shall be received unless the same states that the person was vaccinated externally with vaccine virus.

O'Bannon's two children were excluded from the schools of the district in January, 1909, under the above rules, and because they had not been vaccinated as required by the rules. Then this suit was brought. The trial court granted the writ desired, and declared said rules void. The Supreme Court holds that such judgment was erroneous, and reverses it.

The Supreme Court agrees with the board of directors that under the general statutory provisions they had the inherent right to promulgate and enforce the orders and rules in question. The precise question, the court says, has never before been before it, but has been before the St. Louis Court of Appeals in the case of the matter of the application of Rebenack for a writ of mandamus against the board of education of the city of St. Louis, 62 Mo. App. 8, which has been cited with approval in Indiana, Massachusetts, Minnesota, North Carolina and Utah cases.

The Supreme Court has no doubt that, in the event of a threatened epidemic of smallpox, boards of school directors can pass a rule excluding all pupils who have not been vaccinated. That a person who has never been vaccinated is subject to the contagion of smallpox is general knowledge. That vaccination has reduced the ravages of this disease is also general knowledge. That the appearance of unvaccinated pupils in a public school at a time of a smallpox epidemic would tend to break up and disorganize a public school is unquestioned. That the school board has the power to absolutely suspend the school during epidemics of contagious or infectious diseases, the court thinks can hardly be questioned. No court would compel the opening of a school under such circumstances. The power here exercised was a very similar power, and, if these rules were reasonable, this court sees no reason why their enforcement should be prohibited.

The Illlinois rule does not go to the extent of holding that a board of education, in case of a threatened smallpox epidemic, could not exclude pupils who had not been vaccinated.

The courts may be somewhat divided on the question as to whether or not vaccination, under all conditions and at all times, may be made a condition precedent to a child attending a public school; but the courts are practically a unit in holding that in the event of a present or threatened epidemic, such rules are reasonable and should be upheld by the courts. And such has been the rule in states where there is no express authority requiring vaccination. Many states have passed laws requiring vaccination of pupils before entering schools, and these have been generally upheld, and that, too, in the face of statutory and constitutional provisions making such schools open to all pupils within the required ages.

This court will not go further on this branch of the case. Nor will it go beyond the case in question. For years there had been smallpox in Sedalia. Within two weeks of the trial in the lower court there were yet cases there. At the promulgation of the rules in question, there were a number of cases, so there was not only a threatened epidemic of the disease, but an epidemic itself. This court is of opinion that school boards in Missouri, in the event of a smallpox epidemic, or a threatened smallpox epidemic, have the right to enforce such rules as were enforced in this case, unless they are precluded therefrom by other statutes now to be considered.

It was contended that, by reason of the compulsory school act, the rules in question would enforce this parent to violate that law, and that under that law the rules enforced by the school board were void. That act, however, in no way affects these rules. In the first place, there can be no prosecution of a parent for failing to send his child to school under that act until after an officer of the school district has notified him to send such child, and then, if he fails, a prosecution can be had. This parent was in no danger of violating that law. The act makes it a misdemeanor to violate its provisions, and this court has yet to hear of a criminal case wherein a defendant was convicted of willfully violating a law, when in fact he has manifested the disposition that this parent had to comply with the strict letter of the law; but, laying aside all levity, the act of the school board, whose officer must initiate the prosecution by giving notice, would be an absolute defense. Beyond all this, the compulsory school act must be construed with the whole body of the school law, and when so construed, it can be made to harmonize therewith to the end that there would be no violation of the law. The court is of the opinion that there is no real conflict between rules of the character involved in this case and the compulsory school act.

But Section 9765 of the Revised Statutes of Missouri of 1899 was chiefly relied on as the battering ram by which these rules of the school board were to be demolished. An analysis of that section shows: (1) It prohibits a child afflicted with a contagious or infectious disease, or one exposed to such a disease and liable to transmit the same, from attending a public school; (2) for determining either its diseased or exposed condition, either the teacher or school board may require the child to be examined by a physician; (3) such child may be excluded so long as there is danger of transmitting such disease; (4) a refusal on the part of the parent or guardian to permit such child to be examined authorizes the exclusion of such child from the school; and (5) if the parent or guardian shall persist in sending such child to the school, such act is made a misdemeanor and a punishment is affixed. This analysis of the section shows that it is dealing wholly with a case where a child is actually diseased, or has been exposed to a disease of the character named. The statute does not undertake to abrogate the general power to control the school given to the board of directors, nor does it undertake to deal with the subject of needful rules. One main purpose of this Section 9765 is to provide a punishment for that class of either careless or persistent parents who are willing to inflict on others the diseases and troubles of their own children. The first part of the statute, as said, deals with a concrete case of a diseased or exposed child; but by no maxim, or other rule of construction, can this court see how it can be said that in the enactment of that statute there was a legislative intent to preclude a school board from enacting reasonable rules to prevent the appearance of contagious or infectious diseases in the schoolroom. The rules in question in this case were enacted to prevent the appearancce of disease in the school. This the school board can do, so long as its rules are reasonable, under the general power.

This court is, therefore of the opinion that the school boards of Missouri have the right to enact and enforce rules of the character here in question at all times whenever there is either a smallpox epidemic in the district or whenever there is a threatened smallpox epidemic. The very purpose of such regulations might be thwarted were the epidemic itself to be actually awaited.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

September 30

1 *A Practical Diet Chart. H. D. Arnold, Boston.
2 Nasal and Nasopharyngeal Conditions as Causative Factors in Middle-Ear Disease. G. A. Leland, Boston.
3 Diagnosis of Phthisis and Its Association with Certain Simulating Diseases. C. Floyd and W. W. Barker, Boston.
4 *Distinction Between the Psychoneuroses not Always Necessary. G. L. Walton, Boston.
5 *The Ocular Tuberculin Reaction. F. P. McCarthy, Ancon, Canal Zone.
6 *Modification of the Thomas Wrench for the Treatment of Rigid Valgus. R. O. Meisenbach, Buffalo, N. Y.

1. **Practical Diet Charts.**—In the preparation of these charts Arnold has aimed to give on one sheet of paper all the data necessary for arranging and calculating the nutritive value of a diet, and to furnish a convenient means of recording the results. The feature which makes these charts practical for use is the information given as to the nutritive value of food in measures such as are used in everyday life. A fairly accurate record may thus be obtained with very little inconvenience to the patient. The tables give the composition of ordinary articles of food. The values are approximate only, but are sufficiently accurate for practical use. The tables are based chiefly on Atwater and Bryant's statistics. Arnold shows that scientific work in connection with the diet must be based on the caloric value of foods, and the amount of each of the three ingredients (protein, fats and carbohydrates) contained in the food. The quantitative regulation of food is as important as its qualitative regulation. These charts give all the data needed in the practical regulation of the diet in such a form that calculations can readily be made and the results can be conveniently recorded.

4. Abstracted in THE JOURNAL, July 24, 1909, p. 317.

5. **Ocular Tuberculin Reaction.**—In a series of cases at the Colon Hospital in which the ocular reaction was tried by McCarthy, the test was applied to various diseases besides tuberculosis. Two hundred and sixty-three cases were tested, and the results have been satisfactory as compared with the reports of other observers. Sixty-four cases of pulmonary tuberculosis were tested, with 54 positive reactions and 10 negative. In the first stage of the disease 22 cases were tested and all were positive, 100 per cent. In the second stage, 12 were tested, with 11 positive and 1 negative reaction. In the third stage, 30 were tested, with 21 positive and 9 negative reactions. Forty-five patients had positive sputa. Fifteen patients had negative sputa, and 4 raised no sputum. Of 3 cases of miliary tuberculosis tested, 2 gave positive reactions and 1 negative. Of 20 cases of clinically suspicious tuberculosis, 12 gave positive reactions, with 8 negative ones. Most of these patients had suspicious physical signs in the chest, some had slight rise of temperature, emaciation, night-sweats and cough. In 25 patients not considered tuberculous, but with obscure temperatures and no signs of tuberculosis clinically present, 21 were negative and 4 positive to the test. Of 8 cases of acute bronchitis and 6 of chronic bronchitis, no positive reactions occurred. Of 9 patients with pleurisy with effusion and 7 with pleuritis sicca, 1 of each failed to react, showing 14 positive reactions out of 16 cases. There was 1 positive reaction in 3 cases of bronchial asthma tested; 2 cases of pneumothorax reacted positively. Fourteen cases of lobar pneumonia were tested, 4 of which were unresolved; negative results were obtained in every case. One case of bronchopneumonia in an old man gave a positive reaction, although the sputum was negative. In 16 cases of malarial fever, all complicated with bronchitis, amebiasis, uncinariasis and other conditions, 14 patients failed to react, with 1 positive result. Of 19 cases of typhoid fever, 8 gave positive reactions and 11 negative. Of the 8 positive cases there were 3 blood cultures taken, all showing the *Bacillus typhosus;* in the other 5 no blood cultures were taken. In the 11 negative cases of typhoid, all had blood cultures, 3 showing the paratyphoid bacillus, 3 the para-colon bacillus, 1 the *Bacillus typhosus* and 3 bacilli in the typhoid group. In 4 cases of tuberculous bone disease, 2 of Pott's disease, 1 each of tuberculous knee and tuberculous elbow, there were four positive reactions. Of 3 cases diagnosed as tuberculous adenitis, 2 cervical and 1 inguinal, all gave positive reactions.

In a group of miscellaneous diseases the following were negative: 1 tabes dorsalis, 1 syphilitic periostitis, 2 chronic nephritis, 1 cirrhosis of liver (with chronic diarrhea), 2 gonorrheal arthritis, 1 filariasis with chronic nephritis, 1 hemoglobinuric fever, 1 empyema, 1 chronic heart, 1 traumatic rupture of lung with hemorrhage, 3 epidemic cerebrospinal meningitis, 1 leprosy, 1 syphilis (secondary), 3 acute nephritis, 3 amebic dysentery, 1 relapsing fever, 1 cystic kidneys, 2 chronic diarrhea, 4 uncinariasis, 4 liver abscess, 1 ulcer of foot, 2 arthritis (obscure), 1 each of alcoholic neuritis with rise of temperature, T. B. kidney, chronic nephritis, pericarditis and perinephritic abscess—42 cases in all.

Five miscellaneous cases gave positive reactions: amebic dysentery with temperature, posttyphoid arthritis, blastomycosis dermatitis, hematuria, aortic aneurism with bronchiectasis. Nine normal individuals gave negative reactions.

6. **Modification of the Thomas Wrench.**—For cases which do not yield to either manual force or the ordinary wrench, Meisenbach has devised a modification of the Thomas wrench whereby the os calcis, as well as the tarsal bones, are under the control of the operator and by means of which force can be exerted with as great accuracy and precision as is desired. The wrench is applied in a similar way to the Thomas instrument, but, before the force is exerted, the strap is wound around the external aspect of the os calcis and tensely adjusted to the hook on the opposite arm of the wrench. The wrench is applied from the external aspect of the foot, when external force is desired, and vice versa when internal force is the object. In applying the wrench, it should be approximated firmly to the foot, and care should be taken to fasten the strap firmly before any force is applied. The wrench itself is made similar to the Thomas wrench, to the lower arm of which is attached a strap about 60 cm. long with holes. On the corresponding arm there is a hook whereby the strap may be attached at any length desired. The author has used this wrench with great success in obstinate cases that have not yielded to other methods.

New York Medical Journal

September 25

7 Abrus Precatorius in Epithelioma. J. V. Shoemaker, Philadelphia.
8 Prevention and Cure. B. Robinson, New York.
9 Symphysis by Immediate Prothesis. C. J. Koenig, Paris, France.
10 Plea for the Advancement of the Study of Medical History. H. Pomeranz, New York.
11 *Uncontrollable Uterine Hemorrhage. A. Samuels, Baltimore.
12 Tetanus with Recovery Following Injection of Antitetanic Serum into the Sciatic Nerve. C. M. Stimson, Philadelphia.
13 Perforating Ulcers of the Feet in Two Brothers, Caused by Productive and Obliterative Endarteritis. W. E. Sanders, Alta, Iowa.
14 Physiology and the Second Law of Thermodynamics (concluded). F. H. Garrison, Washington, D. C.

October 2

15 *Persistence of the Gonococcus in the Prostate. G. A. De S. Saxe, New York.
16 *Treatment of Locomotor Ataxia by a Modification of the Re-Educational Exercises. E. A. Fruchthandler, New York.
17 Diagnosis of Incipient Pulmonary Tuberculosis. W. J. Pulley, New York.
18 Few Points on the Early Diagnosis of Tuberculosis. L. S. Peters, Silver City, N. M.
19 Postoperative Suppression of Urine. A. B. Cléborne, Savannah.
20 *Pathogenesis of Round Ulcer of the Stomach. J. A. Work, Elkhart, Ind.
21 Operation for Brain Tumor with Occurrence of Hitherto Unrecognized Circulatory Phenomena. P. Zenner and S. P. Kramer, Cincinnati.
22 Determination of the Hepatic Area by X-Rays and by Auscultatory Percussion and Allied Methods. Echinococcus Disease. A. L. Benedict, Buffalo.

11. **Uncontrollable Uterine Hemorrhage.**—Samuels reports two cases of uncontrollable uterine hemorrhage in which hysterectomy was performed.

15. **Gonococcus in Prostate.**—Of 150 cases of chronic gonorrheal infection of from 6 months to 18 years' duration, 6 per cent. showed prostatitis. The older the infection, the more frequent was the prostatitis. Of the 108 cases of prostatitis studied by Saxe, 31, or 28.7 per cent. showed gonococci in the prostatitis secretion. The older the infection the less probable was the finding of gonococci in the prostate. After three

years, gonococci were found rarely, even after most persistent efforts. Many and thorough examinations are needed before it is at all certain that the gonococcus is absent from the prostate. Mixed infection occurred in 86 per cent. of the cases studied. The gonococcus alone occurred in only 5 cases of 108, and all 5 were cases of less than one year's duration. The older the case the more prevalent was the mixed infection. Staphylococci occurred in 74 per cent., bacilli in 28 per cent., Gram positive diplococci in 10 per cent., and streptococci in 7.6 per cent. of cases with mixed infection. The absolute need of microscopic examinations of prostatic secretion was shown by the fact that palpatory signs were absent in 38 cases (35 per cent.), while 13 cases (12 per cent.) showed absolutely clear urine, although the smears showed prostatic infection. Saxe claims that gonorrheal prostatitis is curable by proper treatment in the great majority of cases.

16. **Treatment of Locomotor Ataxia.**—Fruchthandler describes fully a method of treatment based on the Frenkel method, but without the use of complicated devices. His results have been gratifying to him. For details the reader is referred to the original article.

20. **Round Ulcer of Stomach.**—Work claims that in the causation of the typical round ulcer of the stomach there is: (1) A neutralization of the natural protective bodies current in the blood stream and tissues; (2) the elaboration of either an endogenous or exogenous cytolytic poison which is specifically toxic for gastric mucous membrane; and (3), as a result of these factors, a neurosis and desquamation of actual glandular tissue of the stomach takes place which is accompanied by a lack of gastric mucus and a large increase in the hydrochloric acid.

Medical Record, New York

September 25

23 Clinical Experience with Calcium Lactate in Hemorrhages of the Upper Air Tract. W. K. Simpson, New York.
24 The Therapeutics of Calcium Sulphid in Relation to Surgery and Contagious Diseases. G. D. Ussher, Van, Turkey.
25 The Clinical Side of Disease in the Philippine Islands. T. W. Jackson, U. S. Army.
26 *Simpson and Chloroform. V. Robinson, New York.
27 The After-Care of the Insane. G. H. Williams, Columbus, Ohio.
28 *Tonsil Removal, Opsonic Index and Immunity. B. D. Sheedy, New York.

October 2

29 *The Adverse Influence of Diabetes in Certain Operations on the Eye. C. S. Bull, New York.
30 Joint Tuberculosis: Special Reference to Its Pathology. L. W. Ely, New York.
31 *Tuberculin for the Diagnosis and Therapy of Renal Tuberculosis. W. Karo, Berlin, Germany.
32 The Traumatic Neurosis and Babinski's Conception of Hysteria. T. A. Williams, Washington, D. C.
33 The First American Hospital. J. J. Walsh, New York.
34 *The Staining of Blood Films. J. W. Fisher, Middletown, Conn.
35 Stenosis of Vesical Outlet Following Prostatectomy. J. B. Squier, New York.

26. **Simpson and Chloroform.**—Robinson gives a graphic account of the surroundings and birthplace of James Simpson, who first made use of chloroform in labor.

28. **Removal of Tonsil.**—Sheedy says that tonsils in the young serve an important purpose and should not be removed unless they are so far diseased that their normal function is interfered with. In such cases they no longer act as a fortification and protection against bacteria, but may become the means of entry of these enemies to health. Immunity is produced by the tonsils; natural immunity is caused by inflammations, and artificially acquired immunity is produced in the tonsillar crypts by agglutination and the development of opsonic power.

29. **Influence of Diabetes in Operations on Eye.**—Of 115 operations, 62 were cataract extractions, 40 were preliminary iridectomies, 9 were iridectomies for optical purposes, owing to the presence of central corneal opacities, and 4 were iridectomies for chronic glaucoma. Of the 62 cataract extractions, 40 were senile cataracts in diabetic patients, and all the patients were 65 years of age or over. These were all extractions with iridectomy, and all the patients recovered without any serious complications, though the wound healed slowly in 11 cases. There were no hemorrhages and no sign of infection in any of the cases. Ten cases showed slow healing of the wound, and all gave evidence of arterial degeneration and a high intravascular tension. The remaining 22 cases were all pure diabetic cataracts; that is, they were cortical cataracts, bluish-white in color, and somewhat swollen. The patients' ages varied from 36 to 40 years. In each case, before operation, care was taken to reduce the percentage of sugar to a minimum and, so far as possible, to eliminate the abnormal products, acetone, diacetic acid and oxybutyric acid. In 6 of the 22 there was a somewhat profuse hemorrhage into the anterior chamber, which recurred several times. In 2 cases there were retinal hemorrhages, which did not recur and were slowly absorbed. In 6 cases the operation was followed by iritis, without much exudation, which was obstinate in resisting treatment, and a discission of the opaque capsule was necessitated in 2 cases. In the remaining 8 cases there were no complications, either at the time of the operation or following it, and the wounds healed promptly with excellent results as to vision. In 14 of the 22 cases there were signs of arteriosclerosis in the conjunctival vessels, and after the extraction of the cataracts the same condition was found in the retinal arteries. In the remaining 8 cases arterial degeneration was demonstrable. In the second list of operations 40 cases of preliminary iridectomy in cataract patients, 22 were senile cataracts in diabetic patients, whose ages varied between 60 and 68, and 18 were true diabetic cataracts in patients under 40 years. In the 22 cases of senile cataracts no case of iritis occurred after the iridectomy, but in 3 cases there was an annoying hemorrhage into the anterior chamber and the external wound healed very slowly, and in these 3 the signs of arteriosclerosis were present. In the 18 cases of true diabetic cataracts iritis occurred in 4 cases, but owing to prompt treatment no permanent synechiæ were formed. In the third list of operations there were 9 iridectomies for optical purposes, owing to central corneal opacities. There were no anterior or posterior synechiæ and no signs of intraocular irritation. They were all young diabetics, under 40, and with one exception, all did well, the wounds healing promptly. In all 9 patients the fellow eye was normal. In the fourth and last class of operations there were 4 iridectomies for chronic glaucoma performed before the field of vision was much contracted. All 4 patients did badly, and 1 patient fell into collapse and nearly died. Three were men and 1 was a woman. Profuse hemorrhage into the anterior chamber occurred in all 4 cases, and recurred several times, but there were no retinal hemorrhages. In the fourth case, a woman aged 59, there was a profuse hemorrhage into the anterior chamber. Eight months later the patient succumbed to an attack of diabetic coma.

31. **Tuberculin in Renal Tuberculosis.**—Karo says that tuberculin is of great value in the treatment of renal tuberculosis, and that no such patient should be operated on until this treatment has proved a failure. Even after the operation the tuberculin treatment is of utmost importance.

34. **Staining of Blood Films.**—The most uniform results have been obtained by Fisher from a slight modification of Jenner's stain, which requires the use of no other apparatus than the staining solution and slide, and is prepared after the following formula: Take 200 c.c. of a 1.25 per cent. solution of yellow aqueous eosin in distilled water and mix with 200 c.c. of a 1 per cent. solution of methylene blue, medicinally pure, Grübler, in distilled water. Allow this mixture to stand in an uncovered shallow porcelain evaporating dish for from 24 to 36 hours, protected from dust, then filter through a fine-grained filter paper; dry the residue in the incubator or oven at from 55 to 60 C. This powder is shaken up with cold distilled water, filtered through fine paper, and washed with distilled water until the washings are a thin, dirty, purplish color. Dry the precipitate on the paper, either in the air or in the oven, not above 60 C., then scrape off the powder and store in a bottle. This gives enough powder for from 300 to 400 c.c. of stain. Take the above powder, 0.2 gram, and of methyl alcohol (acetone free), 100 c.c. Rub up in a mortar, adding the alcohol to the powder, a drop at a time, allow to stand for 3 or 4 days in a bottle, then filter and add 25 c.c. of methyl alcohol. The bottle should be corked tightly to avoid evaporation and consequent concentration of the stain, but the solution may be diluted later with another 25 c.c. of methyl alcohol if necessary. Make blood films on slides, dry quickly in the air, and cover with a thin layer of the staining solution without previous fixation. Stain

the slide for from one to three minutes, then wash with some of the original solution, removing any possible precipitation and intensifying the stain. Next wash in running water until film is a mahogany color. Dry with filter paper. It is impossible to overstain. The red cells are stained a terra cotta; stippled cells are easily detected by the minute bluish markings; nuclei are blue and sharply defined; blood platelet in clumps are a paler blue, but quite distinct; granules of the polymorphonuclears are a dull mahogany; granules of eosinophiles, a brighter mahogany; basophilic granules are bluish violet; malarial parasites are stained a greenish blue; the pigment of the pigmented forms is unaltered, and the ordinary bacteria are stained blue. This method of staining is used in counting bacteria for vaccines and the opsonic index.

Lancet-Clinic, Cincinnati

September 25

36 Criminal Abortion. A. B. Davenport, Columbus, Ohio.
37 The *X*-Ray in Diagnosis of Pulmonary Tuberculosis. S. Lange, Cincinnati.
38. The Sanatorium Treatment of Tuberculosis. L. B. Morse, Chimney Rock, N. C.
39 Abscess and Acute Softening of Brain. P. Zenner, Cincinnati.

October 2

40 Genitourinary Diseases. E. O. Smith, Cincinnati.
41 The Therapeutics of Belladonna. W. E. Bloyer, Cincinnati.

Kentucky Medical Journal, Bowling Green

September 15

42 The Evolution of the Anesthetist. W. H. Long, Louisville.
43 Turbinectomy as a Remedy for Adenoids and Nasal Obstruction. D. S. Reynolds, Louisville.
44 Cardiospasm. G. A. Hendon, Louisville.
45 Excision of the Gasserian Ganglion. A. Schachner, Louisville.
46 *Unusual Case of Infantile Paralysis. B. C. Frazier, Louisville.
47 Floating Cartilage in the Elbow Joint. R. L. Ireland, Louisville.
48 Postoperative Insanity. I. Abell, Louisville.

46. Infantile Paralysis.—About the middle of July, 1909, Frazier saw a young girl, 14 years old, who, about five or six days before, had suffered from a mild digestive disturbance. She had a temperature of 99 F. and it ranged from that up to 101; no diarrhea and no vomiting. Five or six days later she had become paralyzed. The history was that during the night this girl had awakened her mother and asked the latter to take her hand out from under her, as she had lost the power to do so. In the morning it had extended to the left leg and foot, and a few hours later she could not move the right hand or foot. One unusual feature of the case was in connection with the family history. The mother was 49 years of age when the child was born and the father was about 58 or 60. This was the first and only child. The child had been healthy, had grown rapidly, and had gotten along well at school; had none of the usual diseases of childhood. When this attack begun it was thought to be a spell of indigestion. The girl was menstruating at the time, this being her third period, the interval between periods being several months. A diagnosis of anterior poliomyelitis was made.

Another point of more than ordinary interest was the fact that the patient was exceedingly sore and complained on being moved or handled. She had an unusual degree of insomnia. She slept scarcely at all during the first two weeks, and when moved would ask to be moved back again in ten or fifteen minutes. After the first few days she could draw her right hand up and take hold of an object, or when her foot was drawn up she could push it down, but it was weeks before she could sit alone. She is now able to sit up in a chair and can even hold a book in either or both hands. She can get her hand up to her head by putting it up backward, and can even stand alone when her father stoops down and places her knees together, but she cannot take a step with either foot yet. She can work her left foot along a little, and can raise one of her legs up straight; she can just bend her thigh, not the hip. She cannot turn over in bed unassisted. Occasionally she asks to have her legs crossed, and when she desires to have them uncrossed some one has to do it for her. She is well nourished and has a good appetite, and the condition of the bowels and kidneys is all right.

Medical Fortnightly, St. Louis

September 10

49 Prehistoric Syphilis in America. A. S. Ashmead, Canadensis, Pa.
50 A Reason Why. G. L. Servoss, Fairview, Nevada.

Northwestern Lancet, Minneapolis

September 15

51 Purification of Drinking Water. G. F. Ruediger, Grand Forks, N. D.
52 Water Supply of Minneapolis. R. O. Beard, Minneapolis.
53 Physicians' Investments—Bonds. E. M. Stevens, Minneapolis.

Virginia Medical Semi-Monthly, Richmond

September 24

54 Pellagra—Report of Fourteen Cases. W. F. Drewry, Petersburg, Va.
55 Public Schools and Public Health (concluded). C. G. Kerley, New York.
56 Communicable Disease, the Health Officer, Physician and People. T. L. Richardson, Baltimore.
57 Analysis of Eighty Cases of Labor. K. P. B. Bonner, Morehead City, N. C.
58 Intestinal Irritation—Treatment. G. L. Servoss, Fairview, Nevada.
59 *Dyspepsia—A Misnomer. W. B. Stewart, Atlantic City, N. J.

59. Abstracted in Society Proceedings in THE JOURNAL, August 7, 1909, p. 477, and published in the *Journal of the New Jersey State Medical Society*, for September, 1909.

New York State Journal of Medicine, New York

September

60 Relative Values of the Fowler and Clark Positions. H. B. Delatour, Brooklyn.
61 Internal Secretions and Animal Therapy. W. Browning, Brooklyn.
62 *A Year's Experience with Rubber Gloves. R. S. Fowler, Brooklyn.
63 Roentgen Rays in Diagnosis. E. W. Caldwell, New York.
64 Principles of Obstetric Practice, Based on 2,000 Cases in the Low Maternity. F. H. Stuart, Brooklyn.
65 *Untoward Results from Diphtheria Antitoxin with Special Reference to Its Relation to Asthma. H. F. Gillette, Cuba, N. Y.
66 Neurasthenia and Psychasthenia. N. A. Pashayan, Schenectady, N. Y.
67 Considerations of Senescence. W. M. Gibson, Utica, N. Y.

62. A Year's Experience with Rubber Gloves.—As the result of his experience, Fowler claims that gloves do not reduce the number of postoperative infections; the wound must be somewhat larger to allow of at least occasional visual direction; the tactile sense is decidedly interfered with, nor does the continued use of gloves educate the tactile sense anywhere near that of the bare hand. In his own case there was no difference as regards the condition of the skin of the hands. Manipulations are rendered slower and in some cases decidedly dangerous. The length of time of operation is decidedly increased, and, hence, there is added danger and shock to the patient. Assistants and nurses should wear gloves, as they are not so accustomed to preparation of the hands.

65. Abstracted in Society Proceedings in THE JOURNAL, Feb. 13, 1909, p. 580, and published in the *Therapeutic Gazette*, March, 1909.

Journal of Experimental Medicine, Lancaster, Pa.

September

68 Studies in Edema: Influence of Calcium Chlorid, Adrenalin, Myocarditis and Nephrectomy on the Dilution of Blood During Intravenous Injection of Sodim Chlorid Solution. M. S. Fleisher and L. Loeb, Philadelphia.
69 Idem: Effect of Calcium Chlorid, Adrenalin and Myocarditic Lesions on the Blood Pressure in Animals Injected Intravenously with Sodium Chlorid Solution. M. S. Fleisher and L. Loeb, Philadelphia.
70 *Influence of Concentration (Gibson's Method) on the Presence of Tetanus Toxin in Blood Serum. J. F. Anderson, Washington, D. C.
71 *Relations of the Thyroid Glands to Glycosuria. E. G. Grey and W. T. de Sautelle, Baltimore.
72 *Influence of the Thyroid on Carbohydrate Metabolism. J. H. King, Baltimore.
73 *Effect of the Injection of Bile on the Circulation. J. H. King and H. A. Stewart, Baltimore.
74 *Enzymes of Tuberculous Exudates. E. L. Opie and B. I. Barker, New York.
75 Auto-Antibody Formation and Antihemolysis. C. E. Simon, E. Melvin and M. Roche, Baltimore.
76 *Proteolytic Enzymes and Antienzymes of Normal and Pathologic Cerebrospinal Fluids. A. R. Douchez, New York.
77 *Experimental Studies of Pneumococcus Infections. S. Strouse, Baltimore.

70. Influence of Concentration.—Anderson shows that concentration of antidiphtheritic serum by precipitation with ammonium sulphate and acetic acid, followed by dialysis, does not remove all the toxic impurities that may be in such serum, and that the foreign toxin is probably carried with the antitoxin in the globulin fraction.

71. Relation of Thyroid Glands to Glycosuria.—After thyroidectomy, the glycosuria produced by ether or adrenalin in the normal animal is greatly reduced. Thyroidless dogs fed with powdered thyroid gland show a return of the glycosuria

more or less proportional to the amount ingested when treated with ether or adrenalin. As the thyroids regenerate the ether or adrenalin glycosuria increases similarly. The experiments indicate that the secretion of the thyroid is connected directly or indirectly with the metabolism of the sugar in the body.

72. **Carbohydrate Metabolism.**—King finds that the thyroid retards the destruction of carbohydrates in the body and that iodothyrin, the active principle of the gland, exerts this influence even more strongly than the whole gland.

73. **Effect of Injection of Bile on Circulation.**—In experimental jaundice there is an increase of calcium in the blood; and the authors, finding that bile pigment in combination with calcium and sodium, is less toxic than uncombined pigment, are of the view that increase in calcium is a protective mechanism against the bile pigments of obstructive jaundice.

74. **Enzymes of Tuberculous Exudates.**—The observations here recorded show, as previously indicated, that the mononuclear epithelioid cells of tuberculous tissue contain an enzyme which digests protein actively in an acid and slightly less actively in neutral medium, being wholly inactive in the presence of alkali. Unlike the enzyme of the polynuclear leucocytes, this enzyme is not inhibited by the serum of tuberculous exudate obtained by injecting tubercle bacilli into the pleural cavity of a dog, although it is inhibited by the blood serum. The serum of such an exudate, unlike the serum of the blood, is capable of digesting denaturalized protein. The power of digesting protein has not been demonstrated in the serum of human tuberculous exudates.

76. **Proteolytic Enzymes and Antienzymes.**—The spinal fluid was found to contain normally neither proteolytic enzyme nor antienzyme. In pathologic conditions, however, enzyme and antienzyme may make their appearance in the spinal fluid. In inflammations of other serous cavities the antienzymes of the exudated serum as a rule is sufficient to restrain the activity of the proteolytic enzyme freed from the leucocytes, but in infections of the meninges with pneumococcus and *Streptococcus mucosus* free proteolytic enzyme was found in four of five cases. Free proteolytic enzyme has not been found in the spinal fluid in epidemic meningitis; antienzyme was found to have a tendency to disappear more rapidly than in other inflammatory exudates. In subdural non-inflammatory transudates the inhibitory element of the blood serum accumulates, suggesting an interference with the elimination of the antibody from the spinal fluid. In tuberculous meningitis the spinal fluid showed various degrees of antienzymotic action.

77. **Pneumococcus Infections.**—Strouse finds that phagocytosis of pneumococci *in vitro* runs parallel with phagocytosis *in vivo* and that the virulence of pneumococci depends not only on the results of phagocytosis but also on the ability to grow in the body of the animal. The immunity of the pigeon to pneumococcal infection is ascribed to its high normal temperature.

Surgery, Gynecology and Obstetrics, Chicago

September

78 *Treatment of Sepsis with Bacterial Vaccines. H. F. Hartwell, E. C. Streeter and R. M. Green, Boston.
79 Membranous Pericolitis. J. N. Jackson, Kansas City.
80 *Case in which Both Patellæ Were Sutured on the Same Day for Double Fracture. R. Morison, Newcastle-on-Tyne, England.
81 *Direct Blood Transfusion by Means of Paraffin-Coated Glass Tubes. G. E. Brewer and N. B. Leggett, New York.
82 Treatment of Inoperable Carcinoma of the Uterus. G. A. Martin, Berlin, Germany.
83 Late Manifestations of Intracranial Hemorrhage of Traumatic Origin. D. P. Allen, Cleveland, Ohio.
84 Hemorrhagic Uteri: Myopathic Uterine Hemorrhage. B. M. Anspach, Philadelphia.
85 *Rôle of the Lymphoid Tissue in Inflammatory Conditions of the Alimentary Canal. R. V. Dolbey, Vancouver, B. C.
86 The Hormone Theory and the Female Generative Organs. E. Novak, Baltimore.
87 Tait's Operation for Complete Laceration of Perineum. H. Banga, Chicago.
88 Accidental Perforations of the Uterus and Vagina. H. G. Wetherill, Denver, Colo.
89 Symphysiotomy. T. M. Burns, Denver, Colo.
90 *Accidental Implantation of an Epithelioma—Shoulder-Girdle Amputation. J. C. Hubbard, Boston.
91 *A Rapid Interlocking Suture. M. R. Bookman, New York City.
92 *A New Tube and Valve Device for Expanding Collapsed Lung. J. S. Dean, Wheatland, Iowa.
93 Sarcoma of the Cecum. C. A. Hamann, Cleveland, Ohio.
94 Penetrating Wound of the Abdomen. J. L. Wilson, Alexandria, La.

78. **Treatment of Sepsis.**—The 97 cases which form the substance of this report have been infections, mostly acute, with various bacteria, the ordinary pyogenic organisms. They form a miscellaneous collection which can best be described under the general term of "surgical sepsis," and include such diverse cases as septic fingers and hands, septic laparotomy wounds, and septicemia. In every case, the pathogenic organism was determined by culture, and in the majority an "autogenous" vaccine was used. In some cases two different vaccines were employed when it seemed probable that there was more than one offending bacterium. The vaccines were made up according to the method devised by Sir A. E. Wright, somewhat modified according to Mallory and Wright.

The amount of inoculation varied with the micro-organism and with the nature of the infection. The initial dose was from 5 to 25 millions, and this amount was gradually increased at each successive inoculation, as it is assumed that an increasing tolerance was attained. The maximum amount given was usually 100 million, although this was sometimes exceeded. In all cases, except the general infections, an arbitrary interval of three days was made between each two inoculations, that is, they were given every fourth day. Other spacing may be more effective, but this was followed in the boils and carbuncles, and seemed to afford the most satisfactory results. Eighteen patients with puerperal infections recovered. In some of the cases of puerperal infection the effect of vaccine on the temperature and general condition was less striking than in others. These were cases in which an abscess had formed, probably in the tubes, and they did not clear up until the pus was discharged by vagina.

Besides these puerperal patients, 9 general infections were treated; 4 were *Staphylococcus aureus* and 5 were streptococcus; 4 of these 9 progressed to a fatal termination. In the patients who recovered, the authors do not think the vaccine can lay claim to any further share in the successful outcome than the complete surgical treatment which was followed.

The second group, septic laparotomy wounds, comprise 22 cases. Nine of these were clean cases, which were infected secondarily; the remainder were septic and were drained from the beginning. *Bacillus coli* and *Staphylococcus aureus* were the organisms most frequently found, streptococcus came next, while one showed the pneumococcus. When the *Staphylococcus aureus* was found, a "stock" vaccine was used, with the others an "autogenous" vaccine. In some of these cases, when the wounds had remained stationary for some time, improvement seemed to follow immediately after vaccination. Not one patient of this group was dangerously ill, and they were all discharged from the hospital in good condition. In the third group there were 41 cases, largely septic fingers and hands, with some of the lower extremities, including the groin, and a few of the head and neck. These cases represent a class of varying degrees of sepsis. The patients all recovered, some after extensive incisions and some after mutilating operations.

The authors conclude therefore: 1. That bacterial vaccines should be further employed in puerperal infections which do not immediately respond to routine treatment. 2. That bacterial vaccines are of much value in that type of sepsis which has remained stationary for some time. 3. That in the remainder of the cases of this series they were not able to see that the vaccines were of any apparent help.

80. **Double Fracture of Patellæ.**—Morison emphasizes the desirability of using absorbable material in these cases rather than wire or other non-absorbable material. He says that with the patella sutured with catgut it would not be safe to allow movement of the knee in less than from four to six weeks. Morison has never seen permanent stiffness of the joint after this operation in any of his cases, though some of the patients were over 60 years old.

81. **Direct Blood Transfusion.**—The object of this communication is to record the results of some experiments undertaken with a view to finding some simple method of direct blood transfusion. A set of glass tubes were made, some of which were straight, with a uniform caliber, others bayonet-shaped, and still others somewhat tapering in shape and caliber, to be

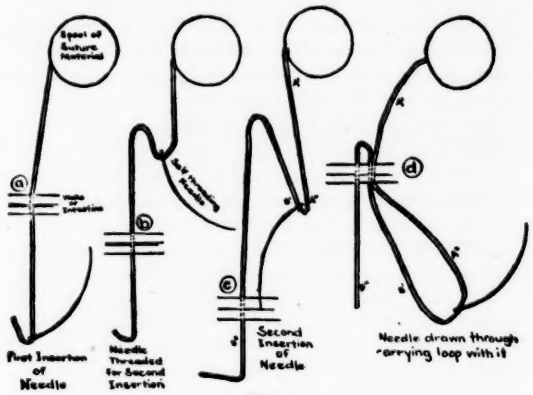
used when transfusion was attempted from a large adult artery to the small vein of a child. Each extremity of the tube is notched to allow of a ligature being applied after the tube is introduced into the lumen of the vessel. These tubes should be sterilized in a steam autoclave or by boiling, and afterward dropped into boiling paraffin, and the excess of melted paraffin removed by shaking the tube in the air. This also results in rapid drying of the paraffin leaving a thin film on both the inner and outer surfaces of the tube. The paraffin adherent to the outer surface of the tube then is removed to allow more ease in handling.

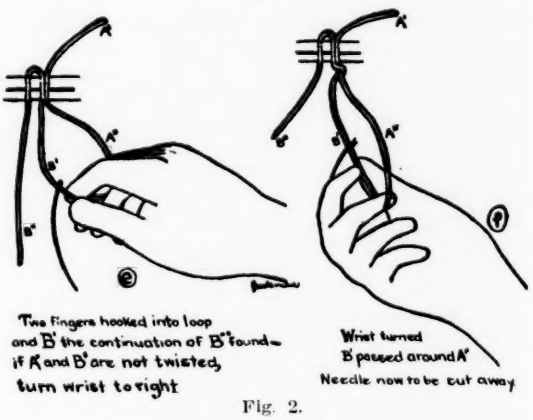
Of 31 experiments only 3 animals died, each from a too-rapid transfusion of the blood, causing distention of the right heart. This accident occurred when the largest tubes were used, through which the flow was very rapid. In some of the later experiments this accident was avoided by gently compressing the arterial trunk with the finger, reducing thereby to a considerable extent the rate of the flow. On one occasion only did the blood apparently clot in the tube, and that was undoubtedly due to the very small caliber of the tube used. In one other experiment clotting occurred in the vein near the extremity of the tube, due to an accidental separation of the paraffin coating. In one other case the blood did not at first flow through the tube, but the arrest of the circulation was found to be due to a clot in the artery from a wound of the intima due to a too vigorous application of the preliminary clamp. When the injured part of the artery was cut away, blood flowed through the tube as in the other experiments. The authors believe that this is the simplest method proposed; that it can be carried out by any surgeon of ordinary experience without the necessity of previous training. They also believe that considerable time may be saved by its employment, in that it requires a shorter exposure of the vessels than is necessary to effect union when the methods by direct contact are employed. The method has been employed to effect transfusion in a patient at the Roosevelt Hospital, who was suffering from acute anemia due to repeated profuse gastric hemorrhage. In this instance blood flowed for nineteen minutes through a medium sized tube without clotting. The patient rallied well. The hemoglobin rose from 30 to 70 per cent. during the progress of the operation, but he died the following day from a recurrence of the hematemesis.

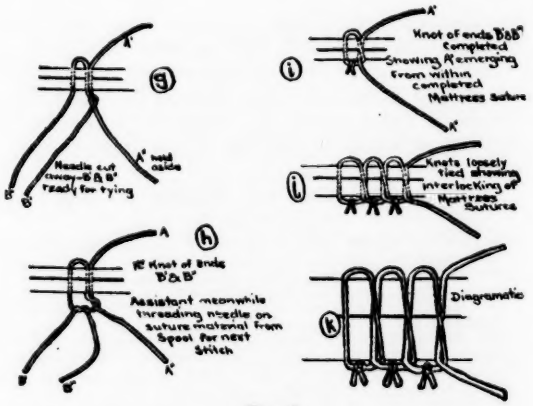
85. **Inflammatory Conditions of the Alimentary Canal.**—Dolbey suggests that a very close analogy may be drawn between inflammation of the tonsil and other inflammatory conditions of the intestines; that the tonsil is the type on which we found a basis of our understanding of inflammatory conditions of the lymphoid tissue of the alimentary canal. The fact that there is normally no lymphoid tissue in the stomach of the new-born infant, and that gastric lymphoid tissue increases in amount up to middle life, and tends to disappear entirely in the later years of life, gives us an easy, if rather superficial, explanation of the rarity of acute inflammatory ulcerative conditions in children or the aged. The absence of lymph tissue in those individuals above 50 will supply a pathologic basis for the well-known clinical findings in gastric conditions in this age. Thus we obtain pathologic support for the dictum that if a patient develops gastric symptoms for the first time after 50, it is more than probable that we have carcinoma of the stomach to deal with rather than ulceration. The incidence of lymphoid tissue at the pylorus and on the lesser curvature explains why chronic ulcers of the stomach are so much more common in those situations.

90. **Accidental Implantation of Epithelioma.**—The clinical points of interest in Hubbard's case may be summarized as follows: 1. The change of an ulcer of the right forearm, which had been for years simple in character, into an epithelioma of marked malignancy. 2. The breaking down of the tissues after an operation following directly on numerous exposures to the *x*-ray and radium. Was it ordinary sepsis, or were the tissues so altered that they could not withstand the added irritation of an operation? 3. The direct inoculation of the breast with the epithelioma. 4. The case emphasizes, in general, the importance of removing cancer with an area of healthy tissue about it. It illustrates the possibility of spreading the disease by bringing the cancer in contact, by instruments or otherwise, with the wound.

91. **Rapid Interlocking Suture.**—To make the suture described by Bookman no special instruments are necessary, only several self-threading, calyx-eyed needles and a spool of Pagenstecher celloidin linen thread or plain silk (preferably the former). The needle used had better be of the long, round, half-curved kind which is easier to handle, and the suture material should be wound on a spool in one continuous


Spool of Suture Material
Needle Threaded for Second Insertion
Second Insertion of Needle
Needle drawn through carrying loop with it
Fig. 1


Two Fingers hooked into loop and B' the continuation of B" found— if A and B' are not twisted, turn wrist to right
Wrist turned B' passed around A'
Needle now to be cut away
Fig. 2.


Knot of ends BoB' completed showing A' emerging from within completed Mattress Suture
Knots loosely tied showing interlocking of Mattress Sutures
Needle cut away—BAB' ready for tying
A' knot of ends B'AB'
Assistant meanwhile threading needle on suture material from Spool for next stitch
Diagramatic
Fig. 3.

length of from ten to twelve yards. After the bowel has been resected, the cut ends are caught in traction sutures so that the mesenteric triangle is situated from one-half to three-fourths of an inch inside the left traction suture. When only a few stitches are required and the suture material used is catgut it is better not to use a self-tnreading needle lest it tear the strand, but to thread a number of needles on the catgut beforehand and slide them along as required. For a detailed description, the original paper should be consulted.

92. **Tube and Valve Device for Expanding Collapsed Lung.**—The device consists of an ordinary soft-rubber drainage tube of any size desired, and a valve made of oiled silk, any

flexible waterproof material or of aluminum; a flexible shield for protecting the valve from interference from the external dressing and to hold the tube in a pivotal manner, thus maintaining it in the chest wall without bending or causing lateral pressure on the tissue. The elastic wing of the shield under body bandage with appropriate pressure, holds the shield in coaptation to the chest, both in inspiration and expiration. A secondary specially devised bandage, over the base of the shield, prevents later movement, hence the combination of the pivotal hanging of the tube, the elastic wing of the shield under appropriate pressure, and the secondary body bandage maintains the tube in absolutely perfect position, leaving the patient free to move as he pleases, in bed or out. The manner of attaching the tube to the shield also prevents the discharge from regaining access to the pleura, as it at once drops away from the end of the tube as soon as it leaves the pleural cavity.

Air is prevented from gaining access to the pleura around the drainage tube by winding the distal end of the tube with 5 per cent iodoform gauze. It does not need to fit the opening overly tight to serve this purpose in practice. As to the valve, in cases of moderate collapse, the tube is used with the end cut at a right angle. This valve closes instantly at the beginning of inspiration, and enables the full atmospheric pressure to act inside the lung. While negative pressure is ordinarily understood, it is not produced within the pleural space by this method. Rarification in sufficient degree is produced to cause rapid expansion of the lung.

Military Surgeon, Washington, D. C.

September

95 Hygiene of the Preventable Diseases. F. M. Munson, U. S. Navy.
96 Ambroise Paré—The Romance Side of His Career as Army Surgeon. A. McGlannan, Medical Corps, N. G., Maryland.
97 Disease—A Conservative Instrument of Nature. P. C. Kalloch, P. H. and M.-H. S.
98 Treatment of Appendicitis Under Conditions Incident to the Naval Service. C. F. Stokes, U. S. Navy.
99 Insolation Followed by Amnesia and Exhaustion. C. N. Fiske, U. S. Navy.
100 The Work of the Board for the Study of Tropical Diseases in the Philippines. J. M. Phalen and H. J. Nichols, U. S. Army.
101 Plague-Like Bacillus Causing Epizootics Among Alaskan Dogs. F. Schmitter, U. S. Navy.

Journal Tennessee State Medical Association, Nashville

September

102 *Epidemic Meningitis. J. Overton, Nashville.
103 Coccidioidal Granuloma and Blastomycosis in the Central Nervous System. N. Evans, Nashville.
104 *Cancer of the Stomach, Including Statistics of the Sites and Frequency of Cancer in the Entire Digestive Tract. C. P. McNabb, Knoxville.

102. **Epidemic Meningitis.**—Overton studied records of 17 patients. Of these 3 were untreated, and all died; of the 12 treated, 7 died; but of these 7, 2 were practically moribund at the time of injection, and 1 died in less than twenty-four hours after the first injection. Five recovered, 4 of these by crisis and 1 by lysis. Recovery was complete in all but 1, and this 1 has still internal squint in one eye. Of the treated patients who died, all died within the first week. Of the 17 patients 5 were white and 12 colored. There was one child 2 years old and one 7; there were 3 men over 50, and the other patients were between 10 and 30. There was a history of premonitory symptoms in 3, and history of recent intoxication in 3. The symptoms noted were: Headache, rigidity and tenderness in neck, and Kernig's sign, in all; Babinsky's sign in 4; herpes in 4; internal squint in 2; paralysis of external rectus in 2; haziness of vision in 2; diplopia in 1; irregular pupils in 4; conjunctivitis in 2, and photophobia in 1; facial paralysis in 3; convulsions only in 1, a child of 2 years; chill in 9; vomiting in 4; typical attitude in 2; irrational state of mind from that of mild degree to active delirium, requiring watching and restraint, in all but 1; albumin in urine in 3; retention or incontinence early in all but 4, present before death in all; sweating free in 5; typical rash in 1; and urticarial rash in 1; in 4 emaciation before death was extreme; there was deafness in 2; there were 2 instances of associated cases; 1 case was complicated with pneumonia; 1 was of the subacute form; the pulse in the bad cases was irregular and slow or running; the temperature was not continuous, and was not above 104, except in one case; there was Cheyne-Stokes respiration in 2. In all who died the leucocyte count remained high, and polynuclears were increased in some to as high as 95 per cent. In the patients who recovered, as a rule, the count gradually fell. The fluid was cloudy in all, purulent in most, and in a few so thick that it would hardly run through the needle. The largest amount of fluid withdrawn from any one case was 270 c.c., and the most serum injected was 210 c.c. The usual dose of the serum was 30 c.c., but on several occasions it was 45 c.c. The effect of the serum on the fluid was generally to increase phagocytosis, to decrease number of diplococci, to lessen their viability as shown by cultures, and to cause a clearing of fluid in most cases of recovery after two or three doses. In patients dying the last cultures were negative in all but one. In those recovering the last cultures were negative in all but one, and in this one the growth was very slight.

104. Abstracted in THE JOURNAL, May 1, 1909, p. 1452.

Providence Medical Journal

September

105 The Problem of Centenarianism. F. C. Clark, Providence.
106 Clinical Pathology of the Endometrium. H. G. Palmer, Providence.
107 Sudden Death Following Lavage of the Stomach. C. H. Bailey, Providence.

Northwest Medicine, Seattle

September

108 General and Metatastic Infections Due to the Gonococcus. J. B. Herrick, Chicago.
109 Intravesical Operations with the Aid of the Cystoscope. H. Meyer, San Francisco.
110 Etiology of Cholecystitis. J. E. Pullman, Wash.
111 *Constipation and Resection of the Colon. C. W. Sharples, Seattle, Wash.
112 *Ophthalmoplegic Migraine Involving the Abducens Nerve. C. A. Veasey, Spokane, Wash.
113 Gangrene of the Ischiorectal Fossæ Caused by Spirillum. A. S. Monro, Vancouver, B. C.
114 Significance of Pain in Women. W. C. Smith, Salem, Ore.

111. **Constipation and Resection of Colon.**—Sharples reports one case in which he employed successfully the procedure advocated and first described by Lane—resection of the colon with anastomosis between the sigmoid and small intestine.

112. **Ophthalmoplegic Migraine.**—Veasey's patient was perfectly well, except for violent attacks of headache, which began in her fourth year of age, and which had recently become of more frequent occurrence. These attacks always began with violent supraorbital and temporal pain on the left side, lasting for an hour or two, and were always followed by nausea and vomiting. Occasionally the first vomiting relieved the pain, but more frequently the vomiting was followed by violent retching which usually continued until after the child had secured some sleep. Marked photophobia was usually present during the attacks. Following one attack there was observed a squint in the left eye, the latter turning toward the nose and the patient complaining of diplopia. After a week or two the squint disappeared. A few days before Veasey examined the patient she had an unusually violent attack, followed by prolonged vomiting and retching, and on the following day again complained of diplopia. At the time of his examination there was a distinct internal squint of the left eye, due to the almost complete paralysis of the external rectus muscle.

Examination of the eyes showed the vision in each to be 6/9, and the refractive error to be a compound hyperopic astigmatism. Each optic nerve presented the appearance of the so-called pseudo-optic neuritis. In ten days' time the paresis had entirely disappeared and the patient fitted with glasses. Under treatment the migrainous attacks became somewhat less frequent, but in October, 1907, there were three very violent attacks within ten days' time, all on the left side, the last of which was again followed by paresis of the left external rectus muscle. The paresis of the muscle this time lasted three weeks, after which it had entirely disappeared. Shortly after this attack the patient passed from under observation, so that the subsequent history is not known.

Memphis Medical Monthly

September

115 Limitations of the Clinical Laboratory. W. Krauss, Memphis.
116 Observations on the Arylarsonates. E. H. Martin, Hot Springs, Ark.

117 Lesions of the Spinal Cord, with Report of Cases. G. G. Buford, Memphis.
118 Analysis of 1,300 General Anesthesias. W. C. Campbell, Memphis.

Medical Herald, St. Joseph, Mo.

September

119 *The Mastoid Operation. C. Williams, St. Paul, Minn.
120 *Osteomyelitis. F. H. Clark, El Reno, Okla.
121 Injury of the Ureters During Abdominal Operations. W. T. Elam, St. Joseph, Mo.
122 Aconite Poisoning. J. D. Seba, Bland, Mo.
123 Treatment of Gonorrhea and Cystitis. W. T. Marrs, Peoria Heights, Ill.

119, 120. Abstracted in THE JOURNAL, May 8, 1909, p. 1536.

Ophthalmic Record, Chicago

September

124 Congenital Absence of Abduction and Adduction; Voluntary Recession of the Globe with Simultaneous Contraction of the Lid Fissure. A. Murray, Chicago.
125 Modification of the Usual Method of Dividing Strictures of the Canaliculi and Lachrymal Ducts; Modification of Dr. Agnew's Canaliculus Knife. H. W. Wendless, New York.
126 Experiences with Dr. Sutcliffe's Keratometer. G. Young, New York.
127 *An Ophthalmologic Phase of the Dangers of Consanguineous Marriages. W. C. Posey and A. C. Sautter, Philadelphia.

127. Published in the *Pennsylvania Medical Journal*, June, 1909.

The Therapeutic Gazette, Detroit

September

128 The Methods for the Relief of Organic Stricture of the Urethra in the Genitourinary Surgical Department of the Jefferson Hospital. O. Horwitz, Philadelphia.
129 The Value of Phenolphthalein from a Therapeutic Standpoint. A. L. Benedict, Buffalo, N. Y.
130 Personal Experience with Acute Anterior Poliomyelitis. R. T. Barnett, Lewistown, Pa.

Woman's Medical Journal, Cincinnati, Ohio

September

131 The End-Results in Six Hundred Cases of Chronic Middle-Ear Suppuration. J. E. Sheppard, Brooklyn.
132 Instrumental Injury of the Urinary Tract. J. F. Todd, Brooklyn.
133 Pellagra: Report of Nine Cases. E. D. Bondurant, Mobile, Ala.

Southern California Practitioner, Los Angeles

September

134 The Necessity for Correct Refraction. M. M. Cloud, U. S. Army.
135 Appendicitis—Its Surgical Treatment. E. A. Bryant, Los Angeles.
136 The Economies of Ophthalmia Neonatorum. G. H. Kress, Los Angeles.
137 Ophthalmia Neonatorum Complications and Treatment. F. D. Bullard, Los Angeles.
138 The Prophylaxis of Ophthalmia Neonatorum. E. M. Lazard, Los Angeles.
139 A Glance at the Past and a Glimpse of the Future. E. S. Godfrey, Phoenix, Ariz.
140 United States Camp of Instruction for National Guard Medical Officers, Presidio of San Francisco, July 29 to Aug. 11, 1909. C. W. Decker, Los Angeles.
141 The Physician and His Duty to Himself. E. B. Ketcherside, Yuma, Ariz.
142 The Gastroscope. H. H. Souttar, London, England.
143 The Use of the Gastroscope. T. Thompson, London, England.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

September 18

1 *Abscess of the Brain in Association with Pulmonary Disease. G. I. Schorstein.
2 The Temperature as a Guide to the Treatment and Prognosis of Pulmonary Tuberculosis. S. V. Pearson.
3 Clinical and Pathologic Aspects of a Series of "Doubtful" Tumors of the Breast. T. B. Henderson.
4 **Peau D'Orange* in Acute Mammary Carcinoma: Cause and Diagnostic Value. A. Leitch.
5 Gangrenous Femoral Hernia with Secondary Resection of Bowel and End-to-End Anastomosis: Recovery. R. D. Mothersole.
6 Scarlet Fever or Influenza? A. Dunlop.
7 Open Method of Treating Wounds After Skin Grafting for First Twenty-four Hours. G. W. Davis.

1. **Abscess of Brain.**—In this paper are recorded 19 cases of cerebral abscess in association with pulmonary disease which have occurred at the Brompton Hospital for Diseases of the Chest during twenty-two years (1882-1904), and at the London Hospital during ten years (1894-1904). It is interesting that in the enormous number of post-mortem examinations at the London Hospital, considerably over 10,000 in the last ten years, there were only 2 cases of cerebral abscess in association with lung disease (apart from pyemia), 1 following on bronchiectasis and 1 on empyema. The 19 cases of cerebral abscesses occurred in association with the following pulmonary diseases: bronchiectasis, 14 cases; empyema, 3 cases; abscess of lung, 1 case; emphysema and bronchitis, 1 case.

4. **Peau D'Orange in Acute Mammary Carcinoma.**—The name *peau d'orange* is descriptive enough to one who has seen it, but to those who have not noticed the condition it may not convey much impression, for orange skin is very variable and the irregular pitting and puckering of the latter might very well describe the fairly common appearance of the skin in cancer of the breast when it is affected by contraction of a growth underneath. In acute carcinoma, on the other hand, the skin has minute pits occurring very regularly, about a quarter of an inch apart, giving the appearance as if the skin had been jabbed with a blunt pin. The thickening of the skin is due to changes in the corium. These changes are the results of lymphatic permeation and consequent lymph stasis. The corium is expanded and the overlying epithelium is raised above its normal level by the pressure, except at those places where it is bound down by the insertion of a hair follicle deep in the corium, where it is moored, as it were. Taking into consideration the already known cause of pitting in brawny arm and this same explanation advanced for the similar condition, *peau d'orange*, in the breast, it seems reasonable to Leitch to argue that where we get the condition it must be due to lymph stasis caused by blockage of the lymphatics. There is no disease of the breast at all likely to produce this appearance other than cancer. Thus even in the absence of other signs a diagnosis of acute mammary cancer from this alone would practically be certain.

British Medical Journal, London

September 18

8 Syringomyelia (Sacrolumbar Type), Occurring in Brother and Sister. J. M. Clarke and E. W. H. Groves.
9 *Oral Sepsis with Peculiar General Symptoms. C. W. Smith and A. E. Barnes.
10 Apparently Acute Simple Febrile Erythema. D. S. Davies.
11 Facial Wrinkles and Character Expressions. W. A. Hollis.
12 *Facial Paralysis. H. H. B. Cunningham.
13 *Multiple Plexiform Neuroma Associated with Brown Pigmentation of the Overlying Skin. C. E. Reynolds.
14 So-Called Delayed Chloroform Poisoning. C. De L. Carey.
15 Treatment of the Small Intestine in Operations for Intestinal Obstruction. C. H. Whitford.
16 Functional Neuroses of Children. J. A. Cotts.
17 The Surgery of Infancy. J. H. Nicoll.
18 *Myxosarcoma of the Prostate in a Child. G. H. Edington.
19 Pneumococcal Peritonitis: Study of Twenty Cases. E. S. Carmichael.
20 Early Radical Operation in Exomphalos. M. Smith.
21 The Association of a Patent Funicular Process with Certain Forms of Hydrocele. R. C. Dun.
22 *Madelung's Deformity. A. MacLennan.
23 Median Harelip. R. C. Dun.
24 *Abdominal Tuberculosis in Young Children. A. Dingwall-Fordyce.
25 *Value of New Tuberculin (T. R.) in Surgical Tuberculosis. D'A. Power.
26 Persistence of Protozoal Tropical Diseases in Man. C. W. Daniels.
27 Feeding and Treatment of Children in the Tropics. W. C. Brown.
28 Treatment of Chronic Dysentery with Special Reference to Surgical Treatment. J. Cantlie.
29 Life-History of Ankylostoma Duodenale. A. T. Ozzard.
30 Etiology and Pathology of Endemic Funiculitis. A. Castellani.
31 Is Punos Kala-Azar? G. A. Williamson.
32 Bronchial Spirochetosis. A. Castellani.
33 Pathology of the Blood in Verruga. P. W. Bassett-Smith.
34 Spinal Anesthesia. G. Chiene and D. W. Buxton.
35 Elimination of Stovain After Spinal Analgesia. A. E. Barker.
36 Action of Cresotinic and Toluic Acids. R. May.
37 The Quack Medicine Traffic. J. C. McWalter.

9. **Oral Sepsis with Peculiar Symptoms.**—The patient presented symptoms which strongly suggested quartan malaria, infective endocarditis and Henoch's purpura; but on the extraction of several teeth promptly recovered. A suppurative gingivitis, to which attention was directed by a toothache, was responsible for the entire disturbance.

12. **Facial Paralysis.**—Subsequent to chronic otorrhea, Cunningham's patient developed facial paralysis, first on one side, then on the other, at an interval of almost twelve months. A complete postaural operation on both sides was productive of cure.

13. **Multiple Plexiform Neuroma.**—A female child, aged 5 years and 4 months, presented a swelling of the left side of the neck behind, extending from the left superior curved line of the occiput above, down over the complexus as far as the level of the first dorsal spine below, and extending round in front as far as the anterior border of the left sternomastoid muscle at the middle of its length. Posteriorly, the swelling was limited to the left side of the neck by the ligamentum nuchæ. Soft and semisolid to the touch over the occipital bone, the tumor below was found to consist of firm masses, feeling like glands, ranging in size from a hazel nut to a pea, and more or less bound together by adhesions. The growth was thickest between the posterior border and the upper third of the sternomastoid and the outer border of the complexus. The skin over the entire tumor, with the exception of the occipital part, was stained brown. This stain was most marked over the prominent belly of the complexus, but extended as far as the middle line of the neck in front and also lower than the tumor below, becoming fainter and mottled at the edges. The opposite side of the neck was faintly pigmented. The pigmentation was first definitely noticed at the age of 2 years. (The mother was clear on this point, as friends used to remark that she had omitted to wash the child's neck.) It began at what is now the upper part of the stain behind, and extended slowly downward and forward. It was not until more than a year later that a swelling was noticed to commence beneath the upper part of the pigmented skin. There was no pain, but slight tenderness, which increased, neither had the child suffered in general health. The child had enlarged tonsils, but no other physical signs to aid or complicate diagnosis. The family history was negative. At operation the tumor was seen to consist of lobulated masses of fibrous tissue held together by strands, and almost inextricably mixed up with the muscle fibers. Microscopic sections showed bundles which resembled normal nerve bundles.

18. **Myxosarcoma of Prostate.**—Edington's patient, a boy, was only 1 year and 9 months old. He was admitted to the hospital on account of retention of urine of a few days' duration. The abdomen was swollen generally, but markedly in the hypogastrium. Between the umbilicus and the pubes was a mass. Examination by the rectum showed that the mass occupied the pelvic cavity in front of the bowel. It was firm, resistant and smooth, and the finger could be swept all round it, except anteriorly; it was also tender. There was slight reddening of the glans and foreskin. The left thigh and knee were edematous. At the post-mortem the mass was found to be a myxosarcoma of the prostate.

22. **Madelung's Deformity.**—According to MacLennan, Madelung's subluxation is not a true subluxation, but is a distortion of the joint. It is due to irregularity of growth at the lower radial epiphysis. The radius is curved either outward and backward, or forward and inward (2 cases), giving rise, respectively, to a forward or backward displacement of the hand. It affects both wrists in about 70 per cent. of the cases. It occurs most commonly in females (about 85 per cent.) during the period of most active growth. The deformity is occasionally present at birth. The irregularity at the epiphysis may be due to a variety of causes, such as trauma, rickets or disease of the central nervous system. Such lesions may occur during intrauterine life. The malady is frequently inherited and may be associated with other deformities. Secondary changes occur in the various structures at the wrist after the disease has been present for a long time. The correct treatment is a cuneiform osteotomy when the deformity is fully developed and the epiphyseal line may with advantage be included. The ulnar metaphysis should be destroyed. The slighter cases which could be righted by a simple osteotomy operative treatment is not necessary.

24. **Abdominal Tuberculosis in Children.**—An analysis of 137 cases of well-marked abdominal tuberculosis made by Dingwall-Fordyce shows that the characteristics of this condition are as follows: In a majority of cases the period of the onset of symptoms is prior to the fourth year of life. The disease is of more serious prognosis the earlier in life its incidence, and the earlier its incidence the more acute its nature. When death supervenes it usually does so within eighteen months of the incidence of symptoms, but in a small proportion of cases a fatal issue is much longer deferred. The mortality from this condition among children fed entirely on the bottle (46 per cent.) is higher than among children wholly or partially nursed at the breast for at least three months (28 per cent.). Free fluid in the peritoneal cavity is a relatively uncommon sign in patients under 3 years of age. Only in cases with free fluid in the peritoneal cavity, plus palpable abdominal masses, is an elevated temperature more common than a practically normal one; when free fluid only is detected, marked elevation of temperature is uncommon. The prognosis is most unfavorable in cases with free peritoneal fluid, plus palpable masses (67 per cent. mortality), and it is hardly less so in cases with masses or marked matting (64 per cent.). In cases with free fluid only (29 per cent.) or discrete glands (18 per cent.) the prognosis is much more favorable. A high swinging temperature, whatever the age and whatever the physical signs, is of very small evil omen; a slight elevation of temperature is of more evil omen the younger the child; absence of rise of temperature—whatever the physical signs—is usually associated with a fatal result only in younger children.

25. **New Tuberculin in Surgical Tuberculosis.**—Power's results point to the conclusion that new tuberculin, given by the mouth in small doses, is useful in the slighter cases of surgical tuberculosis. It is often sovereign against the chronic sinuses which are so often formed after operations on tuberculous tissues—troublesome cases in which the wound nearly heals but not quite, and in which it breaks down time after time on the smallest irritation. It is valuable in enlarged cervical glands which have not undergone extensive caseation or suppuration. It has failed in this crude form in Powers' hands to give any relief to patients suffering from tuberculous peritonitis, tuberculous disease of the joints, and from inflammation of the bones due to tuberculous infection.

Practitioner, London

September

38 Cancer of the Breast: Its Early Diagnosis. A. A. Bowlby.
39 Diseases of the Blood. H. B. Shaw.
40 The Serodiagnosis of Syphilis. J. E. R. McDonagh, R. Müller and G. Morawetz.
41 Vaccine Therapy in General Practice. J. C. MacWatters.
42 •Etiology of Hernia. W. Sheen.
43 Rheumatoid Arthritis: Its Clinical Aspects, Diagnosis and Treatment. E. A. Dent.
44 Chronic Indigestion Considered as a Surgical Disease. R. C. Ellsworth.
45 •Primary Lymphadenoma of the Small Intestine. W. Fletcher.
46 Acid Intoxication. T. G. Moorhead.
47 Mental Deficiency in Children. J. Dundas.

42. **Etiology of Hernia.**—Sheen discusses injury as a factor in the causation of oblique inguinal hernia, considering the question mainly from the medicolegal standpoint.

45. **Lymphadenoma of Small Intestine.**—A man, aged 30, had suffered from pain in the abdomen for two months, with occasional vomiting. His bowels had not moved for seven days. On examination of the abdomen, a sausage-shaped tumor was found in the right iliac fossa. Its lower, outer and inner edges were sharply defined, but above, toward the right hypochondriac region, the belly muscles were rigid, and the upper edge of the mass could not be determined. The tumor was not absolutely dull. It was rather tender and felt doughy. The abdomen was not distended, and was rigid only over the right side, especially just below the costal margin. By rectum the tumor could be felt by the finger. There were no physical signs of disease elsewhere. An enema was administered and a large quantity of hard feces was evacuated. The tumor did not diminish in size. On the following day the patient vomited, and the pulse became rapid and small. An examination of the blood was made, which showed a slight polymorphonuclear increase. No leucocytosis was noticed. A diagnosis of appendicitis was made and laparotomy performed. The tumor was then found to be a large intussusception; the intussusceptum was gangrenous and the sheath perforated. It was removed and the gut united by end-to-end approximation over a bone tube. The patient died two hours after the operation. The intussusception was found to consist of jejunum. There was a second smaller intussusception in the ileum. The

apex of each intussusceptum was formed by a sessile flattened plaque-like tumor. There were six of these growths in the lower jejunum and four in the upper part of the ileum. The tumor at the apex of the jejunal intussusceptum was the largest. There was one small plaque about 10 inches higher up, and the others were contained in the succeeding 6 feet of intestine. The tumors projected into the lumen of the gut from its mucous surface; their edges were covered by mucosa. The flat surfaces of the plaques were uncovered by mucosa, and the centers of the larger tumors were umbilicated. The growths varied in size from that of a shilling to that of a crown piece. They were oval in shape, their long axes being at right angles to that of the intestine. They were not situated at the mesenteric attachment of the gut, nor directly opposite to it, but were found at the side thereof. Peyer's patches were not enlarged, and there was no enlargement of the mesenteric or of other lymph glands. Microscopically, the plaques were found to consist of lymphoid tissue.

Glasgow Medical Journal

September

48 Schools for the Deaf in Scotland and Ireland, (continued). J. K. Love.
49 Extrinsic and Intrinsic Conditions Affecting School Children: Study of Schools and School Children in Glasgow. D. M'Kail.
50 *Treatment of Quinsy. D. J. Guthrie.
51 Tabes Dorsalis in a Female in which Laryngeal Crisis, Ocular Paralysis and Vasomotor Phenomena were Early Symptoms. G. A. Allen.

50. **Treatment of Quinsy.**—Guthrie reports a case to illustrate a method of treatment which has proved successful in his experience. The supratonsillar swelling was opened in the usual way with bistoury and sinus forceps, and a quantity of blood-stained pus evacuated. A tent was erected over the bed, and inhalation of steam with compound tincture of benzoin was given constantly—a measure which afforded the patient much relief—and a calomel purge was administered. Toward evening the swelling had slightly diminished, but swallowing was still impossible and speech thick. Ice was ordered to be sucked at intervals, and instructions given that 2 drams of brandy be administered every three hours as soon as the patient was able to swallow. On the following morning the patient could swallow with little difficulty and the edema had diminished. Temperature was 99; pulse, 85. The tonsil of the opposite side was found to be covered with yellowish spots (follicular condition). A throat spray of peroxid of hydrogen was recommended and the steaming discontinued. A mixture containing 5 minims of liquor strychninæ and 15 minims liquor ferri perchloridi to each (B. P.) dose was prescribed. Following this, the condition rapidly improved, edema and swelling diminished and the patient made an uneventful recovery.

Indian Medical Gazette, Calcutta

August

52 Melancholia in Its Relation to Homicide. G. F. W. Ewens.
53 Indian Snakebite Records in Calmette's Recent Work. F. Wall.
54 Experiences in Tuberculous Disease. J. R. Roberts.
55 Plague Pneumonia. W. A. Hossack.
56 *Operation for Total Excision of Tonsils. H. B. Mylvaganam.

56. **Total Excision of Tonsil.**—Mylvaganam draws the tonsil forward with a pair of small vulsellum forceps toward the middle line, then detaches the anterior pillar from the underlying tonsil with a blunt-pointed curved scissors and the whole tonsil is removed.

Annales de Médecine et Chirurgie Infantiles, Paris

September 1, XIII, No. 17, pp. 577-612

57 *Tuberculosis in Infants. (Tuberculose des nourrissons.) H. Barbier.
58 *Isolation of Contagious Cases in Children's Hospitals. (Isolement des maladies contagieuses dans les hôpitaux d'enfants.) L. Baumel.

57. **Tuberculosis in Infants.**—Barbier states that whatever the predominating anatomic form of the tuberculosis, atrophy and dyspeptic disturbances are constant, with marked involvement of the liver in the latter and their resistance to the best planned diet. These children are particularly sensitive to dietetic errors, especially the abuse of cows' milk, or there may be anaphylaxis for this. There may be also other general or functional signs, inflammation of the glands, enlargement of the spleen, anemia and fever—the picture is completed by the discovery of a bronchial glandular process or of involvement of the lung, especially frequent on the right side. These atypical forms of tuberculosis, inherited or not, are an overwhelming factor in infant mortality, and, with syphilis, they are the most certain and most frequent cause of atrophy of the viscera, especially of the liver, as also of many deformities of the bones which are generally ascribed to rachitis. He describes the typical and atypical forms, the latter being most frequent in the inherited variety, the nutritional disturbances possibly proving fatal without a single tuberculous lesion discoverable at autopsy. Acquired tuberculosis in infants runs a typical course similar anatomically to that in adults.

58. **Isolation of Contagious Diseases in Children's Hospitals.**—Baumel describes the favorable experiences at Montpellier with a series of interchangeable, single-bed, isolated rooms on each side of a corridor. At the other end of the corridor are rooms with three or four beds for convalescents; the two series are separated by a corridor at right angles. Around the outside of the pavilion is a broad piazza or terrace on which each room opens with glass or wire-netting doors. It is thus possible for the parents on the piazza to visit with the sick children in the isolated rooms without direct contact, and this humane provision has proved extremely successful. Another point important in prophylaxis is that the children are taken to the isolation rooms without the necessity for passing through other wards. The toilet, disinfecting rooms, dishes, etc., and the attendants of the isolated single rooms are entirely distinct from those of the convalescent rooms—the aim being to prevent contact in any way. The gate admitting to this ward from the street is entirely separate from the general entrance. Another point on which he insists is the necessity of keeping the little patient the entire period required for isolation: 45 days for diphtheria, scarlet fever and smallpox; 25 days for measles, and 15 days for mumps, chicken pox, etc. The schools, clinics, day nurseries, and other public places where children are assembled should not admit a child after an absence of several days until it presents a medical certificate and the required period of isolation for the disease in question has fully elapsed, counting from the beginning of the disease. He presented this article at the international medical congress, urging the adoption of a resolution protesting against any lack of individual hygiene in carrying out these measures of public prophylaxis, citing as an example a case in which a child with measles was called for by a city ambulance and taken out of bed on a winter night. Instead of compelling the patient to get up and dress, he should have been taken on the mattress, which could have been disinfected and returned. The pediatrist can never be too much on the alert, or too precise in his directions to avoid all chance for dangerous contacts; this is more important and more difficult than to disinfect, but it is the only safe prophylaxis.

Presse Médicale, Paris

September 11, XVII, No. 73, pp. 641-648

59 Congenital Cysts in the Neck. (Kystes congénitaux du cou à paroi dermo-lymphoïde.) A. Broca and Masson.

Revue de Chirurgie, Paris

September, XXIX, No. 9, pp. 413-570

60 *Treatment of Hemorrhoids by Ring Excision. (Traitement des hemorroides par l'excision circulaire totale.) E. Villard and L. Desgouttes.
61 *Tetanus of the Head. (Considérations sur le tétanos céphalique.) Binet and Trénel.
62 *Subphrenic Abscess. G. Piquand. Commenced in No. 1.
63 *Review of End-Results of Operative Treatment of Megacolon. P. Duval.

60. **Treatment of Hemorrhoids by Total Circular Excision.**—Villard reports 24 cases in which the patients were promptly and permanently cured by the method of which an illustrated description is given. The anus is widely dilated thus bringing the ring of hemorrhoids outside; this ring is excised, the parallel circular incisions being carried along as the varicose strip is dissected. The mucosa is detached in the direction of the circular fibers of the sphincter, thus utilizing the plane of cleavage. The vessels are ligated above and the mucosa is easily sutured over the ring of raw surface left by this excision.

61. **Tetanus of the Head.**—Binet reports a case of cephalic tetanus, symptoms of paralysis and of contracture occurring together. The treatment is the same as for generalized tetanus. The mortality of this form is still 38 per cent. and it is liable at any moment to become transformed into generalized tetanus. The prognosis is graver, the shorter the incubation after the traumatism. Spasm of the glottis may prove fatal and general symptoms may develop as late as the fiftieth day after the first manifestations of the cephalic tetanus. His patient was a young man and the head tetanus developed six days after a contusion of the face. He recovered under bromid, chloral and serotherapy. No attempt was made to cauterize the wound.

62. **Subphrenic Abscess.**—Piquand here concludes his long monograph on this subject which is based on 890 cases in the literature. He discusses the history and details of the various kinds of subphrenic abscesses, classifying them according to their origin, with source, concluding with his own experience. The tuberculous subphrenic abscess is rare and is generally consecutive to tuberculous lesions of adjacent organs. In 7 cases the primary affection was in the liver; in 4 in the kidneys; in 3 the subphrenic peritonitis was the result of a tuberculous intestinal process. No examples were encountered of subphrenic abscess resulting from tuberculosis of the pancreas or spleen, but 3 authors have reported some from pulmonary tuberculosis; tuberculosis of the walls of the chest is a frequent cause of subphrenic abscess. In 5 cases the subphrenic abscess was merely one localization of a diffuse tuberculous peritonitis. In others it is possible that the subphrenic lesion constituted the primary manifestation of tuberculosis. In 31 tuberculous subphrenic abscesses only 8 of the patients recovered. In 17 cases no operation was attempted and all these patients died, while 8 recovered out of 14 operative cases.

63. **Results of Operative Treatment of Megacolon.**—Duval reviews 94 operations on record in treatment of this condition. The mortality was nearly 75 per cent. in 59 cases under medical treatment, while it was 34.2 per cent. in 35 operative cases. Eight different technics were followed in the various cases, and he compares the ultimate outcome with each. Resection of the colon has always given the best results; it is the logical treatment of these segmental lesions of the colon, but even this fails in the cases in which the dilatation recurs in another segment of the intestine, in which case all therapeutic measures are futile. In Richardson's case, the entire large intestine became dilated after three operations.

Archiv für Kinderheilkunde, Stuttgart

LI, Nos. 1-4, pp. 1-320. Last indexed July 31, p. 418

64 Histologic and Pathologic Study of Familial Amaurotic Idiocy. H. Vogt.
65 Infant Mortality at Mannheim. (Säuglingssterblichkeit in Mannheim.) S. Felsenthal.
66 Shape, etc., of the Thorax in its Relation to the Apex of the Heart in New-Born Infants. (Zur Morphologie und Semiotik des Thorax in seiner Beziehung zur Herzspitze beim Neugeborenen.) G. Berti.
67 *Gastrointestinal Functional Weakness and Functional Disturbances in Children. (Functionsschwäche und Functionsstörungen des Verdauungsapparates im Kindesalter.) P. Selter.
68 Case of Complex Heart Disease in an Infant. (Fall von combinierter Herzerkrankung bei einem Säugling.) L. Baron.
69 *Acute Bone and Joint Disease in Infants. (Zur Kenntnis der acuten Knochen- und Gelenkentzündungen im Säuglingsalter.) J. Trumpp.
70 Living Child Born without Arms or Legs. (Lebende Amelosmissbildung, zugleich ein Beitrag zu ihrer Aetiologie.) H. Rosenhaupt.
71 Epidemic of Varicella. (Eine Windpockenepidemie.) B. Bosse.
72 "Psychic" Gastric Secretion in Infants. (Zur Frage der "psychischen" Magensaftsecretion beim Säugling.) H. Nothmann.
73 Case of Fetal Chondrodystrophy. H. Weinzierl.
74 Differences in Stomach Digestion during Natural and Artificial Feeding. (Unterschiede der Magenverdauung bei natürlicher und unnatürlicher Ernährung.) A. Aurnhammer.
75 Relations between Production of Milk and Fat Content. (Beziehungen zwischen Milchproduction und Fettgehalt der Milch.) Id.

67. **Gastrointestinal Functional Weakness and Functional Disturbances in Young Children.**—Selter emphasizes the importance of investigating the functioning of the digestive apparatus when children show that they are not thriving. For this, examination of the stools is imperative. He examines some of the stool obtained when the child is first seen, and from the findings in this specimen orders a test diet regulated to exclude the articles which the stool showed were imperfectly digested. Comparison of a specimen of the stool about the third day with that of the first day gives an instructive oversight of gastrointestinal functioning. He gives full details for examination of the feces and interpretation of the findings, especially insufficient mastication; excess of fat; the "carbohydrate stool" with its foamy, acid, fermentation, scraps of potato, etc., and other findings; the "meat stool" showing defective pancreatic or intestinal secretion; the "connective tissue stool," indicating impaired gastric digestion; the "constipation stool" and the catarrhal, and combinations of any of the above. Treatment based on the findings in the feces is generally successful. The aim is merely to arrange the diet so that none of the food escapes digestion, restricting or dropping entirely the substances which the child is transiently or permanently incapable of assimilating. In constipation he has obtained good results with plenty of fat and agar-agar in the form of a pudding or added to milk. The total amount of food should be limited to that strictly necessary. Rest and warmth are the main other factors, letting the child sleep late and take a nap in the day, with thermophore or hot bran cushion for local application of heat for two hours after each meal. Even when the child is up and about, he has the hot cushion worn in a pocket made for it in the waist or shirt. Abdominal massage with a wooden ball (250 gm. in weight) for ten minutes in the morning is a useful adjuvant. In the mild cases a complete cure follows but in others a certain functional weakness may persist for a long time and the diet may require this individual regulation for years to permit the child to develop normally.

69. **Acute Bone and Joint Diseases of Infants.**—Trumpp cites five examples of bacteriogenic and traumatic epiphysitis in infants.

Archiv für klinische Chirurgie, Berlin

XC, No. 3, pp. 265-542. Last indexed Sept. 4, p. 822

76 Transplantation of Joints. (Gelenktransplantation.) E. Lexer.
77 How Long after Death or Amputation can Bone be Kept for Transplantation Purposes? (Wie lange nach dem Tode oder nach der Amputation bleibt der Knochen bezüglich seiner Keimfreiheit transplantationsfähig?) W. Bergemann.
78 Operating under First Whiffs of Ether. (Stellung des Aetherrausches unter den Methoden der Anästhesirung.) P. Sudeck.
79 Experiences with Fulguration Treatment of Cancer. (Erfahrungen über die Fulguration von Carcinomen nach de Keating-Hart.) Abel.
80 Serotherapy of Tetanus. (Zur Serologie des Tetanus: Complementbindungs- und Antilysinversuche.) Kreuter.
81 Experimental Research on Spinal Anesthesia. (Rückenmarksanästhesie.) Rehn.
82 *Present Status of Lumbar and Local Anesthesia. A. Bier.
83 Seventh Case on Record of Successful Operative Treatment of Duodenojejunal Hernia. (Ueber eine operativ geheilte Hernia duodenojejunalis Treitzii.) E. Heller.
84 Suture and Skewering of Bones. (Knochennaht und Knochenbolzung.) A. Hoffmann.
85 Experimental Research on the Sensitiveness of the Abdominal Cavity. (Sensibilität der Bauchhöhle.) C. Ritter.
86 Arthrodesis by Skewering the Bones. P. Frangenheim.
87 Histology of Transplanted Bone. (Zur Histologie des frei transplantirten periostgedeckten Knochens beim Menschen.) A. Läwen.
88 Chronic Inflammatory Tumors after Abdominal Operations. E. Haim.
89 Infection of Gunshot Wounds and Their Treatment with Peruvian Balsam. (Infection der Schussverletzungen und ihre Behandlung mit Perubalsam.) Vollbrecht.
90 Experimental Study of Bactericidal Properties of Peruvian Balsam. (Bakterienfeindliche Eigenschaften des Perubalsams.) Jander.

82. **Present Status of Lumbar and Local Anesthesia.**—Bier states that in his last series of 339 cases of spinal anesthesia vomiting occurred in only 5 per cent. and pallor, nausea and brief disturbance in the pulse in only 9 per cent. Headache was noted in 6 per cent., but exclusively in women who were subject to headache. Spinal anesthesia he regards as indicated only when local anesthesia is inadequate and general anesthesia is contraindicated. He adds that the combination with the scopolamin-morphin "twilight sleep" has been applied often with good results in his clinic, although the lumbar anesthesia alone has proved sufficient even for removal of the rectum.

Klapp and Ehrhardt's suggestions have not yet led to unobjectionable results. His method of vein anesthesia, he asserts, has proved its usefulness and enables operations on the limbs to be performed absolutely painlessly. (It was illustrated in THE JOURNAL, May 1, page 1466.) The secret of success in ordinary local anesthesia for large operations, he says, lies in waiting for fifteen minutes at least before commencing. He reviews the various methods of local anesthesia, remarking that Braun's subcutaneous perineural injection on the nerve leading to the hernia has supplanted Cushing's method. The "twilight sleep" is sometimes useful as a preliminary to local anesthesia, especially for excited patients with exophthalmic goiter.

Deutsches Archiv für klinische Medizin, Leipsic

XCVII, Nos. 1-2, pp. 1-200. Last indexed Sept. 4, p. 823

91 Transient Albuminuria Following Palpation of Abdomen. (Ueber abdominell-palpatorische Albuminurie.) J. Schreiber.
92 Atherosclerosis of Gastric Arteries. (Zur Atherosklerose der Magenarterien.) W. W. Hamburger.
93 Acute Addison's Disease after Thrombosis of Both Suprarenal Veins in Patient with Gastric Cancer. (Akuter Morbus Addisonii nach Thrombose beider Nebennierenvenen.) H. Straub.
94 The Capillary Pulse. (Klinische Untersuchungen über den Kapillarpuls.) K. Glaessner.
95 Influence of Congestion in the Heart on Distribution of Blood in the Organs. (Einfluss cardialer Stauung auf die Blutverteilung in den Organen.) H. C. Thacher.
96 *Clinical Importance of Changes in the Circulatory Apparatus with Change of Position, Standing or Reclining. (Ueber die klinische Bedeutung der Veränderungen am Zirkulationsapparate, insbes. der wechselnden Herzgrösse, bei verschiedener Körperstellung: Liegen und Stehen.) H. Dietlen.
97 *Treatment of Severe Anemia with Transfusion of Minute Amounts of Human Blood. (Behandlung schwer Anämien mit Menschenbluttransfusionen.) A. Weber.
98 The Work of the Heart and the "Beat Volume." (Kritik des Albert-Müller'schen Schlagvolumens.) T. Christen. A. Müller.

96. **Changes in the Circulatory Apparatus with Change of Position.**—Dietlen tabulates the details of 66 cases in which the change in the size of the heart was most striking as the individuals reclined or stood. The normal heart grows smaller as one stands, while the pulse increases. But these changes are not observed in the elderly and in those with heart affections. It is evident that auscultation of the heart may be misleading unless the patient is examined both reclining and standing.

97. **Treatment of Severe Anemia with Transfusion of Small Amounts of Human Blood.**—Weber reports 7 cases from Voit's medical clinic at Giessen in which threatening anemia was influenced to a remarkable extent by transfusion of only 5 c.c. of human blood. No benefit was observed in a number of cases of leucemia. The transfusion of this small amount, he states, is simple and generally harmless, but in a few cases there were signs of mild disturbances after the transfusion. It seems as if the blood from certain persons displayed more toxicity than from others, three patients injected with a certain blood all presenting the same transient disturbances. It was never noticed that when two or more patients received blood from the same source, that one presented disturbances and the other did not.

Deutsche medizinische Wochenschrift, Berlin

September 9, XXXV, No. 36, pp. 1553-1592

99 *Autogenic Puerperal Infection. (Selbstinfektion in der Geburtshilfe.) B. Krönig.
100 Occurrence of Vibriones in Small Intestine and in Stool. (Vorkommen von Vibrionen im Dünndarminhalt und in den Darmentleerungen des Menschen.) Rothe and Meinicke.
101 *Hypophyseal Tumors. (Zur Diagnose und Therapie der Hypophysisgeschwülste.) Z. Bychowski.
102 *Determination and Significance of Tubercle Bacilli in the Blood Stream. (Nachweis und Bedeutung der Tuberkelbazillen im strömenden Phthisikerblut.) Schnitter.
103 Granular Form of Tuberculosis Germs in Sputum. (Granuläre Form des Tuberkulosevirus im Lungenauswurf.) E. Schulz.
104 Radical Operation for Inguinal Hernia. (Zur Radikaloperation der Leistenhernien nach Kocher.) K. Hugel.

99. **Autoinfection in Obstetrics.**—Krönig applies the term "autogenic infection" to that resulting from the bacteria physiologically present in the vagina and vulva, not brought by the obstetrician or nurse. His experience indicates that fully half of the cases of infection soon after delivery are due to aseptic or saprophytic infection of the endometrium; a very small proportion to infection of deep lacerations, and the others are due to extragenital causes. Comparison of the cases in these categories shows that as a rule the septic puerperal affection of autogenic infection runs a mild and brief course. When it is severe there is generally some special local or general predisposition. During a protracted birth the tissues may be so injured that severe infection may result, even when of autogenic origin. With transverse presentation or contracted pelvis if aid is not rendered artificially, the woman may succumb to sepsis from the autogenic infection. He ascribes the difference between the course of autogenic and exogenic infection to the difference in the virulence of the germs. Those physiologically present have been leading a saprophytic existence and their virulence has become attenuated. In exogenic infection the germs brought have generally been living as parasites in some infectious focus and this parasitic existence has enhanced their virulence. He denounces any attempt to disinfect the vagina and vulva as sure to interfere with the physiologic local defensive processes.

101. **Hypophyseal Tumors.**—Bychowski reports a case of tumor in which the bitemporal hemianopsia, the adipose and congenital dystrophy and the abnormal shadow cast by the sella turcica confirmed the assumption of a tumor of the hypophysis. The patient was a young woman and the first symptoms were impaired vision, headache and uncontrollable vomiting. Seven illustrations are given of the findings before and after removal of the tumor by way of the nose. It proved to be a cyst containing two teaspoonfuls of a brown fluid. Recovery was delayed by acute transient meningitis, but the patient was dismissed in two months and a half, entirely free from symptoms, vision 2/3 and 1/10. In all the cases on record the immediate subsidence of the apathetic depression was marked and this was also observed in the present case. The hemianopsia develops first in one eye, which aids in differentiating a tumor in the hypophysis. The development of the genital organs is also liable to be defective with hypophysis tumors, while with tumors of the pineal gland the sexual organs show a tendency to premature development. In Marburg's case the menses dated from the age of eight. Bychowski reviews the experiences of others with hypophyseal tumors and urges prompt operation as soon as the diagnosis is established.

102. **Tubercle Bacilli in the Blood.**—Schnitter has found the Stäubli technic useful for determining the presence of tubercle bacilli in the blood, and tabulates the findings in 34 cases. They were positive in 50 per cent. of 4 cases of tuberculosis outside of the lungs; in none of the 8 cases of pulmonary tuberculosis in the first stage; in 22 per cent. of 9 cases of the second stage, and in 47 per cent. of 17 cases of advanced tuberculosis. Stäubli's method was described in THE JOURNAL, Jan. 30, 1909, p. 426. He dissolves the red corpuscles of the blood by adding 10 or 15 times the amount of 3 per cent. acetic acid and then centrifugating. Schnitter obtains the blood by venesection, adds twice the amount of the 3 per cent. acetic acid solution and then centrifugates.

Deutsche Zeitschrift für Chirurgie, Leipsic

July, XCIX, Nos. 3-6, pp. 201-583

105 Congenital Habitual Dislocation of the Patella. E. Hoffmann.
106 Aneurism of the Axillary Artery After Dislocation of the Humerus. (Fall von Aneurysma der Arteria axillaris nach Luxatio humeri.) Id.
107 *Epigastric Hernia without Palpable Tumor. H. Mohr.
108 Extension in Treatment of Fractures. (Beiträge zur Extensionsbehandlung.) A. Wildt.
109 Lowering the Pelvis for Operations. (Ueber Beckentieflagerung und Schrägstellung des Operationstisches.) Id.
110 Operative Treatment of Large Inguinal Hernia in Children. (Neue Operationsmethode bei abnorm grossen angeborenen Leistenbrüchen im Kindesalter.) A. Thiel.
111 Operative Treatment of Reducible Inguinal Hernia in Children. (Chirurgische Behandlung reponibler Leistenbrüche im Kindesalter.) Castenholz.
112 *Gangrene from Local Anesthesia. (Zwei Unglücksfälle bei Anwendung der örtlichen Betäubung.) H. Strohe.
113 Varices of Anterior Abdominal Wall. (Varicen der vorderen Bauchwand.) W. Lossen.
114 Injuries of Vertebræ. (Ueber Wirbelverletzungen.) G. Berghausen.
115 Training in Speaking after Laryngectomy. (Stimm- und Sprachübungen nach Kehlkopfausrottung.) E. Hopmann.
116 *Operative Gastric Disease. (Ueber die operativen Magenerkrankungen.) Rondorf.

117 Treatment of Primary Radial Paralysis in Fractures of the Upper Arm. (Zur Behandlung der primären Radialislähmung bei Oberarmbrüchen.) Krabbel.
118 Three Cases of Gunshot Wounds of the Skull. (Zur Kasuistik der penetrierenden Schädelschussverletzungen.) H. Luxembourg.
119 Unusual Injuries of Epiphyses. (Zur Kasuistik seltener Epiphysenverletzungen.) Id.
120 *Nephropexy. Sonnenschein.
121 Fracture of Condyle of Humerus. (Ueber Condylenbrüche des Humerus und ihre Behandlung.) H. Landwehr.
122 Dislocation of the Head of the Radius. (Luxation des Capitulum radii.) F. Lohmüller.
123 Operative Treatment of Oxycephalus. (Zur Frage des operativen Eingriffs bei Turricephalie.) Vorschütz.
124 Freund's Operative Treatment of Emphysema of the Lung. (Zur Freundschen Thoraxoperation beim Lungenemphysem.) C. Rath.
125 *Castration in Treatment of Mammary Carcinoma. F. Cahen.
126 Experimental Deforming Arthritis. F. Kroh.
127 Isolated Fractures of Great and Lesser Trochanter. J. Feinen.
128 Congenital High Scapula. (Ueber angeborenen Schulterblatthochstand.) W. Junger.
129 Treatment of Fractures of the Leg. (Zur Behandlung der Unterschenkelbrüche.) Schrecker.
130 Resection in Treatment of Tuberculosis of the Ankle. (Die Resektion bei Fussgelenkstuberkulose nach Bardenheuer.) F. Frank.
131 Diagnostic Importance of Roentgen Examination in Ear and Nose Disease. (Was leistet das Röntgenverfahren auf otiatrischem und rhinologischem Gebiete für die Diagnose?) Jansen.
132 Experimental Research on Incarcerated Hernia including Two Loops. (Tierversuche zur der Frage der "zwei Darmschlingen im eingeklemmten Bruch," der retrograden Darmincarceration, der "Hernie en W," der Gangrän der Verbindungsschlinge.) C. Lauenstein.
133 Rupture of Right Parovarian Cyst, Simulating Syndrome of Acute Appendicitis. H. Matti.
134 Ganglioneuroma of the Knee. E. Hagenbach.

107. **Epigastric Hernia Without Palpable Tumor.**—Mohr has had two cases of this kind in the last few years and describes the difficulty in diagnosing the true cause of the stomach disturbances which were long ascribed to nervous dyspepsia, gastric ulcer, gall-stones or neurasthenia. The patients were men of 34 and 40 and one had had two previous operations performed for supposed abdominal hernia, but the pains soon returned. They seemed to radiate from a certain spot behind the old cicatrix, and at this point the omentum had been drawn out into a peak, the tip of which had grown to the abdominal wall in one case without actual hernia. This peak was resected and the patients' disturbances were cured. The diagnosis is suggested by the history of the disturbances and exacerbation of the pain with certain movements, bending over, sneezing, etc. Stomach disturbances with localized tenderness in the median line should always suggest hernia in men whose occupation requires rapid bending and stretching of the trunk or lifting weights. These repeated traumatic injuries predispose to hernia but are seldom heard of in connection with true stomach affections. It is difficult to distinguish between an epigastric hernia and gastric ulcer, but the lack of connection of the pain with the taking of food, the unimpaired appetite during the intervals of freedom from pain, speak in favor of the former as also the localized center for the radiating colicky pains, the aggravation of the disturbances by physical effort, and their subsidence on reclining. The hernia occurs most often in hard-working men while gastric ulcer is most frequent in anemic girls. An exploratory laparotomy is indicated on suspicion of hernia with severe disturbances, and the prompt cure of the trouble by the operation confirms the diagnosis even if no actual hernia is discovered.

112. **Gangrene After Local Anesthesia.**—In the first of the two cases reported, the great toe became gangrenous four days after an operation under local anesthesia for an ingrowing nail. In the other case a hydrocele was operated on under novocain-adrenalin and gangrene of the scrotum developed. Both patients were elderly and there was a suspicion of arteriosclerosis. The salt solution used was unusually strong, owing to a mistake, and experiments with this solution showed that the addition of the adrenalin favored the production of gangrene. Strohe warns that the salt solution should never be stronger than 0.9 per cent., approximately the same osmotic tension as that of the blood.

116. **Operative Stomach Disease.**—Rondorf expatiates on the advantages of an exploratory operation in obscure gastric affections and relates the good results of operation in 5 cases of gastric ulcer, 7 of gastroptosis or gastrectasia, and 2 of inoperable carcinoma treated by anterior gastrostomy. His experience shows that an apparently inoperable tumor may prove to be operable when exposed, while some which seem to be insignificant are found inoperable. Radical resection is preferable to gastroenterostomy for cancer of the pylorus, he thinks, as this gives a chance for permanent cure while with gastrostomy the patients are still tormented with pains. Resection is indicated, he declares, whenever no metastases can be discovered elsewhere. The size and extent of the tumor are no contraindication, but the operation should not be deferred, even if the patient seems to be doing well under internal measures, until he becomes too debilitated for successful intervention. The surgeon should not hesitate to operate even in advanced and apparently desperate cases, as he can do much good with extensive resection; gastrostomy alone is merely a kind of protracted euthanasia.

120. **Nephropexy.**—Sonnenschein describes the technic which Bardenheuer has been applying during the last ten years with good results. Seven of the twenty patients thus treated have been under observation for three years or more and the kidney still maintains its normal position with the cure of the previous disturbances. He aims to fasten the kidney as high up as possible, making an ample recess for it, and fastening it there by the adhesions that result when the adipose and fibrous capsules have been slit over the convexity of the kidney and drawn together again. Granulation is stimulated by a tampon below and the whole is strengthened by a muscular support made from the half of the quadratus lumborum which is turned over upward and on which the lower pole of the kidney rests. An important factor in the complete cure is the strict bed rest imposed for six weeks.

125. **Importance of Castration in Treatment of Mammary Carcinoma.**—Cahen has applied this measure in 7 cases of mammary carcinoma as he relates in detail. In the first case a woman of 27 had noticed a hardening of the right breast for a year before it was removed with the enlarged adjoining glands. A month later castration was done, after which the enlarged glands in the axilla subsided spontaneously to normal size and the patient gained 22 pounds in weight and a robust appearance, but succumbed to a recurrence by the end of the year. The results of the castration were equally marked in two other cases and the patients are still in good general health to all appearances, although excision of a recurring nodule was required in these cases. All these patients were young women with extensive cancers. He urges experimental research to determine the influence of castration on mammary cancers. The carcinoma in the breast in all his cases was differentiated with the microscope, and his experience to date has convinced him that castration should be regarded with favor as an adjuvant to local operative measures for mammary carcinoma in young women. Survival of the patient for three and a half and over five years to date in some of the cases seems to confirm this.

Jahrbuch für Kinderheilkunde, Berlin

September, LXX, No. 3, pp. 253-390

135 *Pyloric Stenosis in Infants. (Zur Frage der "Pylorusstenosen" im Säuglingsalter.) M. Pfaundler.
136 *Concentration of the Blood in Infants. (Untersuchungen der Blutkonzentration des Säuglings.) E. Reiss.
137 Action of Gastric Juice on Human and Cow's Milk. (Zur Kenntnis der Einwirkung des Magensaftes auf Frauen- und Kuhmilch.) C. Lempp and L. Langstein.

135. **Stenosis of the Pylorus in Infants.**—Pfaundler presents 57 pages of evidence to show that the clinical signs of stenosis of the pylorus may occur both with and without an actual organic basis.

136. **Concentration of the Blood in Infants.**—Reiss gives the details of twenty-one cases, mostly of gastrointestinal disturbances in infants, to illustrate the assumption that the severe syndrome in gastrointestinal catarrh in infants is in large part due to the loss of fluids in the diarrhea and, in consequence, the suffering of the tissues from the lack of water. This may be severe while yet the child shows no direct signs indicating the source of the trouble. The somnolency

and convulsions, etc., in acute gastroenteritis are mainly due, he thinks, to the abnormal concentration of the blood and other organic fluids. The only reliable means of determining the actual concentration of the blood is with the refractometer. This reveals the condition without fail even when the freezing-point of the blood proves a misleading guide owing to the constant tendency of the organism to maintain its molecular concentration. In many cases in which refractometric examination showed extreme concentration of the blood, the freezing-point was approximately normal.

Mitteilungen aus den Grenzgebieten der Med und Chir., Jena

XX, No. 3, pp. 377-564. Last indexed July 24, p. 331.

138 *Gastric Sarcoma. (Sarkom des Magens.) H. Ziesche and C. Davidsohn.

139 *Nature and Importance of Cammidge Pancreas Reaction. J. E. Schmidt.

140 Sensibility of Certain Internal Organs. (Experimentelle Untersuchungen über die Empfindungen in der Schlundröhre und im Magen, in der Harnröhre und in der Blase und im Enddarm.) R. Zimmermann.

141 Measurement and Clinical Significance of Muscle Tonus. A. Exner and J. Tandler.

142 *Symptoms in Incipient Pneumonia Simulating Appendicitis. (Ueber perityphlitische Symptome — Pseudoappendicitis — im Beginne der Pneumonie.) E. Melchior.

143 *Treatment of Spastic Paralysis by Resection of Posterior Spinal Nerve Roots. (Behandlung spastischer Lähmungen mittels Resektion hinterer Rückenmarkswurzeln.) O. Foerster. (Die Technik der Foersterschen Operation.) A. Tietze.

138. **Gastric Sarcoma.**—In this communication from Breslau 3 cases are reported in detail and compared with 146 collected from international literature which are tabulated in 14 groups. Operative treatment was applied in 52 cases and the ultimate outcome was about the same as with carcinoma. The course of a gastric sarcoma seems to be rather shorter than that of a carcinoma, averaging not over 17 months and still less for the spindle-celled and round-celled varieties, although for the less malignant myosarcoma it averages 3 years and 4 months. The tables and bibliography include 3 cases published in THE JOURNAL (Baldy, Dock and Howard), 1898-1902.

139. **The Cammidge Pancreas Reaction.**—Schmidt applied this test in 14 cases of gastric cancer or pancreatitis, the findings in some having the value of an actual experiment on account of the pancreas having been injured in operating on other organs. In addition to this he conducted research on cats and dogs and gives the details of 29 different series of tests. His conclusions emphasize the importance of this test, although his research has shown that the reaction is not specific for pancreatic affections, but occurs as the result of destruction of substances with nucleoglycoproteid content. The pancreas being richest in pentoses gives the reaction the most readily, but it may be observed also in other affections accompanied by considerable destruction of tissue and especially of nuclei. A single negative response should not be regarded as conclusive, and a positive response does not indicate exclusively a pancreatic affection. But as those affections which are also liable to give a positive reaction (pneumonia, appendicitis with diffuse peritonitis) are generally so readily differentiated from pancreatic disease there need be little confusion on this account. A positive response with suspicion of a pancreatic disorder is strong corroborative evidence. (The technic for the Cammidge pancreatic reaction was published in THE JOURNAL, Aug. 22, 1908, page 691.)

142. **Appendicitic Symptoms in Incipient Pneumonia.**—Melchior differentiates the condition by the incongruence between the slight objective signs in the region of the appendix in comparison to the intensity of the general malaise, the high fever, spontaneous pain in the chest, headache, flushed face, rapid breathing and relatively good pulse. A little cough confirms the diagnosis of pneumonia even before any physical signs in the lungs can be detected. Herpes and a preceding chill are additional evidence. He discusses further the differentiation of typhoid commencing with symptoms simulating appendicitis. A number of persons have been operated on by mistake on this account. Both typhoid and pneumonia are accompanied by prodromal discomfort, headache and slight heaviness. Dicrotism is the rule in the typhoid pulse which is relatively low, an important differentiating sign in comparison with the full, high pulse of pneumonia. The number of leucocytes is also abnormally low in typhoid in comparison to the hyperleucocytosis of pneumonia and appendicitis. Melchior does not ascribe any special prognosis to the pneumonia commencing with abdominal symptoms. In the 10 cases on record in which the appendix was operated on by mistake, only 2 of the patients died, showing the tolerance of pneumonia patients for a laparotomy. In more than half of the cases on record the rapid breathing attracted attention from the first even before the pneumonia was differentiated. The respirations increase in frequency outside of affections of the respiratory apparatus only with severe generalized peritonitis or when the diaphragm is pushed up by tympanites or effusions. An initial chill was observed in only 4 of the cases. In some on record the onset was sudden and acute; one patient collapsed on the street and was operated on at once on suspicion of perforated gastric ulcer. The prodromal discomfort which is the rule with pneumonia is seldom observed with appendicitis; here the symptoms are generally limited to the abdomen. Vomiting was a frequent early symptom in these pneumonia cases; some of the adult patients vomited several times during the first few days—a rare occurrence with pneumonia in adults, although common in children.

143. **Treatment of Spastic Paralysis by Resection of Posterior Spinal Nerve Roots.**—Foerster here presents a monograph on the causes of spastic paralysis and effects of operative treatment by resection of three or four of the posterior roots. He reports with illustrations two cases of congenital spastic paralysis of both legs with slight paresis of the arms, a case of tuberculous cervical spondylitis and another of multiple sclerosis, both with total spastic paraplegia of the legs and one of right hemiplegia, in all of which he tried this method of operative relief. In the first three cases the spastic contraction of the muscles was materially improved or entirely remedied. The results were pronounced even directly after the operation, the exaggerated reflexes being reduced to normal with cessation of the reflex movements associated with the voluntary movements. By severing the roots it was seen that the corticogenic excitability of the different muscles was still retained, so that volitional movements then became possible. After the operation the patients must be trained to use their limbs properly and they must be controlled with orthopedic appliances to prevent the limbs from assuming abnormal positions until volitional control is fully regained. The last two cases are instructive from several points of view; they show among other things that this method of operative treatment is less promising for the arms than for the legs, while it offers an encouraging outlook for severe spastic paralysis of the legs of either spinal or cerebral origin. For the present he operates only in cases in which there is nothing to lose, although he does not forget that in exceptional cases Little's disease has been known to improve spontaneously. Compression myelitis, multiple sclerosis, etc., also justify this measure, but he does not advise it in cases of mere hemiplegia except for a hemiplegic arm with pronounced spasmodic contraction and reflex comovements, especially in cases of infantile hemiplegia in which the spastic trouble is pronounced while the paretic is comparatively slight. Such cases are particularly promising. No sensory disturbances were noted in his patients after the operation nor decided ataxia, except that in one instance a pre-existing ataxia persisted to some extent. The technic is described by Tietze in detail; it does not differ essentially from any laminectomy, but is best done at two sittings. He commends the intervention as a great onward stride in the treatment of spastic paralysis. It does not restore normal conditions, but it is surprising to behold how the theoretical premises are confirmed by the effect of the operation. It is remarkable to see how a child previously entirely helpless, unable to take a step, can be put on his feet and enabled to walk after a fashion, without any direct surgical intervention on his legs. The success attained is due in large measure, Tietze declares, to Foerster's patience and perseverance in training the patients afterward to use their limbs. In one case a secondary local operation for contracture was necessary. The illustrations "before and after" show the previously helpless child now walking upstairs.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

August, XXX, No. 2, pp. 137-260

144 *Transverse Presentation, Version and Extraction. (Ueber Querlage, Wendung, Extraktion.) B. S. Schultze.
145 Stenosis of Cervix Cured by Supravaginal Resection without Disturbing Connection with the Vagina. (Fall von erworbener hochgradiger Stenose des Cervicalkanals geheilt durch supravaginale Cervixresektion mit Erhaltung der Portio.) R. Werth.
146 Significance of Glandular Hyperplasia and Hypertrophy of the Endometrium. K. Himmelheber.

144. **Transverse Presentation, Version and Extraction.**—A recent German article stated that about 2,000 children and 400 mothers lost their lives annually in Germany in consequence of transverse presentation, and these figures were denounced as excessive. Schultze here presents detailed statistics which show that the number is actually twice as high, fully 4,000 children not surviving birth on this account. Few succumb to the transverse presentation itself; the trouble is in the extraction by the foot before dilatation is complete. He urges that if the cervix is not sufficiently dilated, operative delivery by some method of Cesarean section should be given the preference. Version does not avert the danger that threatens the child, and extraction is dangerous both for mother and child. By waiting until the os is completely dilated, if the transverse presentation of the child is the only indication for version, and by patiently waiting for spontaneous foot delivery, so long as there are no indications for immediate extraction, he is positive that many of the 4,000 children who now die during delivery from transverse presentation would certainly survive. He adds that no attempt should be made to loosen the cord as this is entirely unnecessary and liable to harm the child.

Münchener medizinische Wochenschrift

September 7, LVI, No. 36, pp. 1825-1872

147 Reaction-Inducing Properties of Pure Neutral Lipoids. (Nastin, ein reaktiver Fettkörper, im Lichte der Immunitätswissenschaft.) H. Much.
148 Serodiagnosis of Hydatid Disease. (Zur Serodiagnostik der Echinokokkusinfektion.) Kreuter.
149 *The Senile Type of Epidemic Cerebrospinal Meningitis. (Der senile Typus der übertragbaren Genickstarre.) F. Reiche.
150 Histologic Study of the Hypertrophied and Insufficient Heart Muscle. M. Lissauer.
151 Camphor and Pneumococci. (Kampher und Pneumokokken.) A. Seibert.
152 Effective Element in Scarlet-Red Salve that Promotes Granulation in Wounds. E. Hayward.
153 Induced Insanity. (Ueber psychische Infektion.) C. Hermkes.
154 Typhoid Agglutination Test in Paratyphoid Infection. (Mitagglutination für Typhus bei Infektion mit Bac. enteritidis Gärtner.) W. Rimpau.
155 Extraperitoneal Cesarean Section. (Zur Frage des extraperitonealen Kaiserschnitts.) O. Kneise.
156 Endemic of Gonorrhea among Children taking Baths at a Health Resort. (Eine Gonorrhoeendemie bei Schulkindern in einem Solbad.) P. Bendig.
157 Diastolic Murmurs in Third Left Interspace Sign of Dilatation of the Aorta. (Bedeutung diastolischer Geräusche im dritten linken Interkostalraum für die Diagnose von Erweiterungen der Aorta.) P. Stein.

149. **The Senile Type of Epidemic Meningitis.**—Reiche's experience in 2 cases confirms Schlesinger's statement, based on 5 cases, that epidemic cerebrospinal meningitis runs a peculiar course in the elderly, affecting a senile type. The Kernig symptom was always pronounced, but there was slight or no opisthotonos. The latter may also be absent in cases in children under three. There was little tendency to fever in these elderly patients; in some the temperature never rose above normal. The importance of differentiating meningitis is evident not only on account of prophylaxis for others, but also on account of the prompt benefit liable to follow intraspinal injections of a curative serum. In 1 of the cases hemiplegia was almost the first symptom to call attention to the disease, and Schlesinger has reported a case in which the onset of the meningitis simulated apoplexy. One patient was a man of 61 who had fallen down-stairs and the meningitis developed after the trauma, but was not discovered until autopsy. Leyden and others have reported trauma and contusion as the exciting cause of epidemic meningitis during an epidemic. In this sporadic case, however, there must have been some intermediation of a "meningococcus-carrier." There was no herpes in either case.

Virchows Archiv, Berlin

August, CXCVII, No. 2, pp. 193-384

158 Congenital Soft or "Gap" Skull. (Der angeborene Weich- oder Lückenschädel.) Wieland. Concluded.
159 Cancer of the Thyroid. (Zur Frage der bösartigen Epithelgeschwülste der Schilddrüse.) M. Zehbe.
160 Origin of Vesicular Cells in Spleen Nodules. (Herkunft der blasigen Zellen in Milzknötchen.) S. Itami.
161 Comparatively Slight Resistance of Bones to Action of Cold. (Verhalten des Knochens gegenüber Kälteeinwirkung.) H. Kleinschmidt.
162 Peripheral Spread of Inflammations of the Spinal Meninges. (Peripherische Ausbreitung der Entzündungen der Rückenmarkshäute.) O. Appelius.
163 Research on Postmortem Burns. (Studien über Verbrühung.) O. Leers and R. Raysky.
164 Complications of Pulmonary Tuberculosis, and Distribution of Tubercle Bacilli in the Organs and Blood of the Tuberculous. (Komplikationen der Lungentuberkulose und über die Verbreitung der Tuberkelbazillen in den Organen und im Blut der Phthisiker.) G. Liebermeister.

Wiener klinische Wochenschrift, Vienna

September 9, XXII, No. 36, pp. 1227-1256

165 *Technic for Anaphylactic Seroreaction with Cancer. (Versuchstechnische Bemerkungen zum Nachweis des anaphylaktischen Temperatursturzes.) H. Pfeiffer.
166 Serodiagnosis of Syphilis in Obstetrics. (Zur Serodiagnostik der Lues in der Geburtshilfe.) E. Bunzel.
167 Portable Extension Apparatus for Fractures. (Portative Extensionsverbände für Frakturen an der oberen Extremität.) R. Frank.
168 Influenza Bacillus as Causal Agent of Cholecystitis. O. Knina.

165. **Diagnostic Cancer Anaphylaxis.**—Pfeiffer here gives the details of his technic for the anaphylactic seroreaction with cancer, described in THE JOURNAL, August 28, page 752. His experience confirms, he says, its differential importance.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXV, No. 1, pp. 1-282. Last indexed July 24, p. 333

169 Physiology of Embedding of Ovum. (Zur Physiologie der Eieinbettung.) E. Gräfenberg.
170 Growth and Proportions of the Fetus. (Wachstum und Proportionen des Fötus.) C. H. Stratz.
171 *Convulsions in New-Born Infants of Eclamptic Mothers. (Eclampsia neonatorum.) P. Esch.
172 Differential Diagnosis of Liver Cystadenoma and Ovarian Tumors. (Beitrag zu den grossen multilokulären Cystadenomen der Leber, unter Berücksichtigung der Differentialdiagnose gegenüber von Ovarialtumoren.) E. Weishaupt.
173 Ovarian Papillary Adenocarcinoma with Polypous Metastasis in Uterus. L. Arzt
174 Rubber Gloves in Obstetrics. (Die Gummihandschuhprophylaxe in der Geburtshilfe.) W. Hannes.
175 *Permanent Operative Cures of Cancer of Cervix. (Zur Frage der Dauerheilung des Collumkarzinoms durch die Operation.) P. Reinecke.
176 Bacteriologic Study of Puerperal Fever. (Bakteriologische Untersuchungen beim Kindbettfieber.) E. Sachs.

171. **Eclampsia in New-Born Infants.**—Esch discusses the condition of children born to women in eclampsia, stating that in many cases on record the organs showed the same characteristic changes as those of the mother. Convulsions in the new-born can be ascribed to eclampsia only after exclusion of all other causes, intracranial hemorrhage, intoxication from morphin previously taken by the mother, etc. He has encountered 3 cases in which both the mother and infant presented the typical syndrome of eclampsia. This brings the number on record in accessible literature to 32, except that in 6 cases the mothers presented albuminuria alone, without actual eclampsia. The first convulsion occurred in the infants from a few minutes to forty-six hours after birth, and the convulsions lasted from thirty seconds to ten minutes. The intensity of the convulsions did not seem to parallel the severity of the eclampsia in the mothers, the opposite being rather the case. The infants were all at or near term, but the mortality of children of women with eclampsia is generally high; it was 22.7 per cent. in 234 cases in his own experience. Treatment of eclampsia in the new-born can be only symptomatic, avoiding irritation from without, giving small doses of bromid or chloral by the rectum, with saline infusion and fluids to promote diuresis, and warm baths to aid in the elimination of toxins.

175. **Permanent Cure of Cervix Carcinoma.**—Reinecke calls attention to the fact that the recurrences in his experience were almost always in women who had had severe hemorrhage or prolonged suppuration during or after the operation. Out of 399 patients only 153 were in an operable condition, and recurrence followed in 76, while 42 have been completely cured for from five to seventeen years. All the recurrences developed within three years.

Zentralblatt für Chirurgie, Leipsic

September 11, XXXVI, No. 37, pp. 1283-1312

177 *Search for Perforated Gastric Ulcer. (Ueber die Aufsuchung des durchgebrochenen Magengeschwürs.) C. Ewald.

177. Search for the Perforation of Gastric Ulcer.—Ewald states that the perforation is almost invariably located close to the pylorus, above or below, so that it is almost always found inside an area of about 2 square inches, and this region is readily reached by lifting up the margin of the liver concealing it. The easiest mode of access he has found to be by an incision, not through the epigastric line, but parallel to it, through the right rectus muscle, pushing the longitudinal ligament toward the center. The finger is then introduced and as it pushes the longitudinal ligament toward the median line the peritoneum is incised under the guidance of the finger. The margin of the left lobe of the liver is then lifted up and the perforation generally presents; it is unnecessary to draw out the stomach in the search. Only in the rarest cases will the perforation be found elsewhere. He adds that his patients were almost all men between 30 and 50, mostly drinkers, but the few women formed no exception to this rule.

Zentralblatt für Gynäkologie, Leipsic

September 11, XXXIII, No. 37, pp. 1283-1312

178 *Improvement to be Realized in Obstetrics by General Practitioner Doing Major Obstetric Operations. (Verbesserung der Geburtsleitung durch Ausführung der grossen geburtshilflichen Operationen von Praktikern.) H. Sellheim.

179 Indications for Version with Cephalic Presentation. (Zur Indikationsstellung der Drehungen nach Scanzoni bei Vorderhauptslagen und mento-posterioren Gesichtslagen.) R. Ziegenspeck.

180 A Self-Holding Speculum that can be taken Apart in Position. (Ein selbsthaltendes zweiblättriges "in situ" zerlegbares Spekulum.) H. Boshouwers.

181 Age at First Menstruation of Chinese and Japanese Girls. M. Yamasaki.

178. To Facilitate Major Obstetric Operations by the General Practitioner.—Sellheim urges that every general practitioner should see to it that there is some place arranged for aseptic obstetric operations, easy of access, in the neighborhood, where he can send and operate on his patients without wasting time and effort trying to transform an ordinary bedroom into an aseptic operating room. He declares that even the smallest hospital should have an aseptic maternity room; the surgeons have shown how to conquer all such obstacles. Obstetricians should profit by their initiative, and students should be trained in obstetric operations, from the smallest to the most serious. He insists that all physicians could do a certain share of such surgical work if only they had enough energy. What is right and proper for surgery is right and proper also for obstetrics. It is much wiser, he adds, to teach students every branch of practical obstetrics than to sit with folded hands and watch the present ever-widening separation of School and Practice, which will have to be corrected later.

Zeitschrift für klinische Medizin, Berlin

LXVIII, Nos. 5-6, pp. 349-524. Last indexed Aug. 28, p. 752

182 The Interchange of Gases in the Lungs in Polycythemia. (Ueber den Lungengaswechsel bei Erythrocytosis: Polycythaemia rubra.) H. Senator.

183 Elimination of Carbon in Urine. (Ueber die Ausscheidung des Kohlenstoffs im Harn.) E. Magnus-Alsleben.

184 Bacteriology of Blood in Febrile Conditions. (Bakteriologische Untersuchungen des Blutes bei fieberhaften Erkrankungen.) G. Kiralyfi.

185 Perforation of Aneurism in Aorta into Superior Vena Cava. (Zur Kasuistik der Perforation von Aortenaneurysma in die obere Hohlvene.) L. Buchstab and M. v. Tiesenhausen.

186 Roentgen Localization of Left Auricle of Heart. (Lokalisation des linken Vorhofs des Herzens im Röntgenbild.) L. Jaffe.

187 *Pharmacologic Research on Nitroglycerin. (Zur Pharmakodynamik des Nitroglyzerins.) L. F. Dmitrenko.

188 Therapeutic Efficiency of Certain Pure Solutions of Colloidal Metals. (Therapeutische Wirksamkeit einiger anorganischer Hydrosole.) G. Izar.

189 Migrating Power of the Leucocytes in Various Infectious Processes. (Ueber das Emigrationsvermögen der Leukozyten bei verschiedenen infektiösen Prozessen.) C. v. Rzentkowski.

190 Lack of Proof to Date that Heart-Block can Occur from Muscular Changes in the Myocardium with Intact Conducting Mechanism. (Kann der Adams-Stokessche Symptomenkomplex bei intaktem Reizleitungssystem lediglich durch Erkrankung des Myokards entstehen?) A. Schmidt.

187. Indications for Nitroglycerin.—Dmitrenko reports 23 cases in which he studied the pharmacodynamics of nitroglycerin; its action was manifested in 16 of the cases by subsidence of the pressure in the brachial artery, while at the same time the pressure rose in the arteries in the fingers. This with other facts observed indicates, he thinks, that the drug has an elective action on the peripheral portion of the circulation. As it dilates the arterioles the resistance they previously offered to the blood stream is reduced and thus the work of the heart is lightened to that extent. If the heart is very weak and close to exhaustion the blood pressure in the finger arteries rises very little if at all. The organism responds to dilatation of the cutaneous vessels with contraction of the visceral vessels as the vasomotor innervation strives to maintain the pressure uniform throughout. The power of dilatation of the peripheral vessels determines the amount of action of the nitroglycerin. When the peripheral vessels have lost their elasticity under the influence of typhoid, tuberculous or diphtheria toxins, nitroglycerin is not only useless, but, if the heart is weak, actually dangerous. Under favorable conditions it reduces the pressure in the central portions of the circulation and increases the pressure in the peripheral, the latter feeling the effect longer. It begins to wane in from three to thirty-five minutes, but the action of the drug is still perceptible in the finger arteries by the end of the hour. It is indicated only in the cases in which the pressure at the periphery rises, while the brachial pressure drops under its influence. This phenomenon is particularly evident when the patients feel worse after administration of digitalis, which has whipped up the irritated, much hypertrophied heart muscle without removing the obstacles in the periphery.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

THE INFLUENCE OF CERTAIN DRUGS ON THE TOXICITY OF ACETANILID AND ANTIPYRIN. By Worth Hale. Hygienic Laboratory Bull., No. 53. Paper. Pp. 60. Washington: Government Printing Office.

LEUCOPATHIES, MÉTASTASES, ALBUMINURIES ET ICTERES LEUCOPATHIQUES. Par Emile Feuillié, Préparateur à la Faculté de Médecine. Paper. Pp. 196, with illustrations. Price, 6 francs. Paris: G. Steinheil, 1909.

MEDICAL GYNECOLOGY. By Samuel Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists. Second Edition. Cloth. Pp. 684, with illustrations. Price, $5. Philadelphia: W. B. Saunders Co., 1909.

A HANDBOOK OF MEDICAL DIAGNOSIS. By J. G. Wilson, A.M., M.D., Professor of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College. Cloth. Pp. 1412, with 408 illustrations and 14 full-page plates. Price, $6. Philadelphia: J. B. Lippincott Co.

A MANUAL OF OTOLOGY. By Gorham Bacon, A.B., M.D., Professor of Otology in the College of Physicians and Surgeons, Columbia University, New York. Fifth Edition. Cloth. Pp. 492, with 147 illustrations and 12 plates. Price, $2.25. Philadelphia: Lea & Febiger, 1909.

THE PRACTICE OF MEDICINE. By James Tyson, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the Hospital of the University. Cloth. Pp. 1412, with illustrations. Fifth Edition. Price, $5.50 net. Philadelphia: P. Blakiston's Son & Co., 1909.

CLINICAL MANUAL FOR THE STUDY OF DISEASES OF THE THROAT. By James Walker Downie, M.B., F.F.P.S.G., Lecturer on Diseases of the Throat and Nose, University of Glasgow. Second Edition. Cloth. Pp. 415, with 104 illustrations. Price, $3.25. New York: The Macmillan Co., 1909.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By James Nevins Hyde, A.M., M.D., Professor of Dermatology in Rush Medical College, Chicago. Eighth Edition. Cloth. Pp. 1100, with 223 engravings and 58 plates in colors and monochrome. Price, $5. Philadelphia: Lea & Febiger, 1909.

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